TEXTILE WORLD

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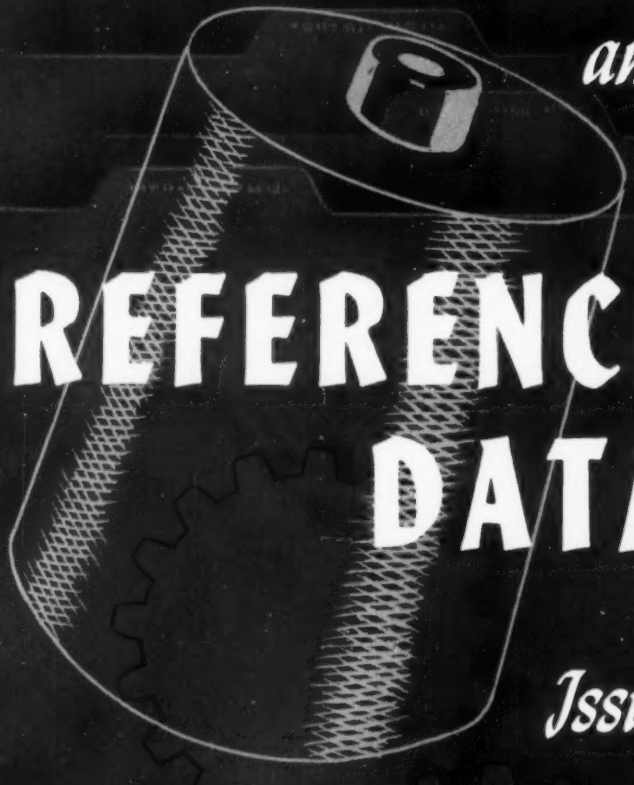

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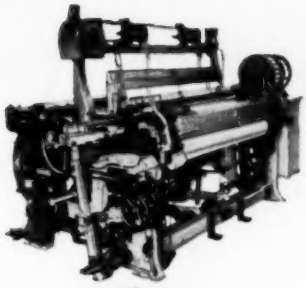

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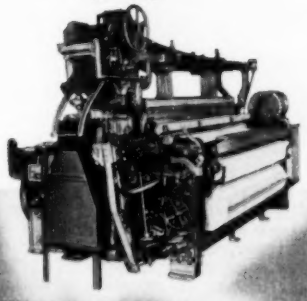

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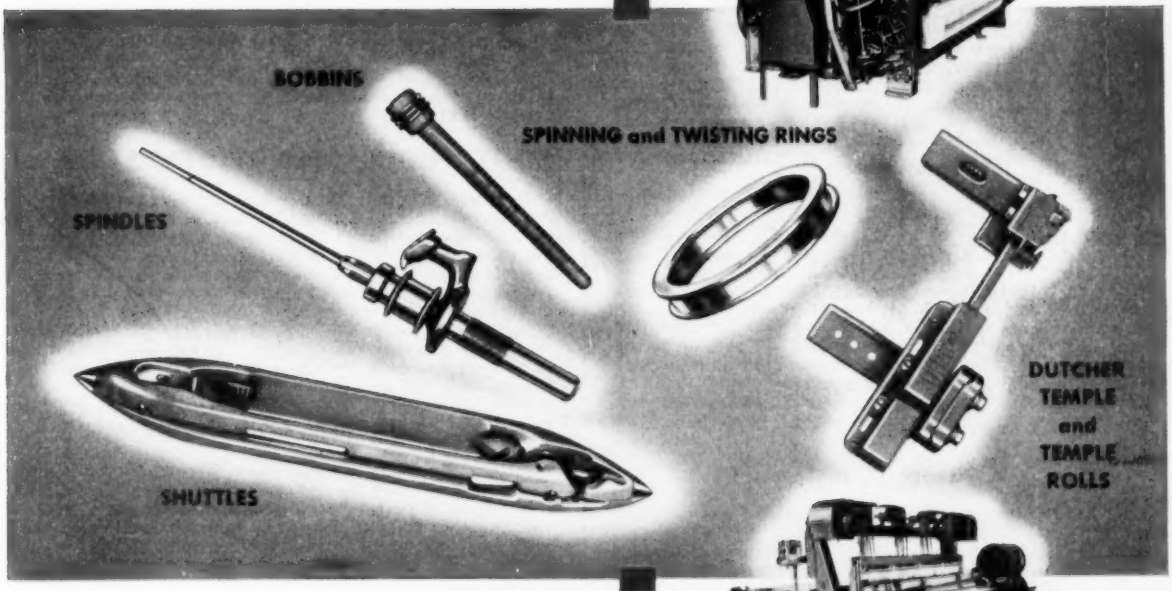

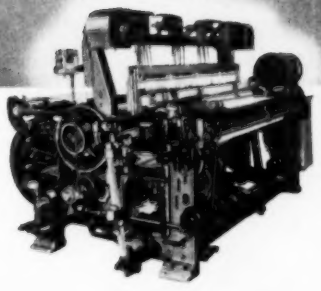

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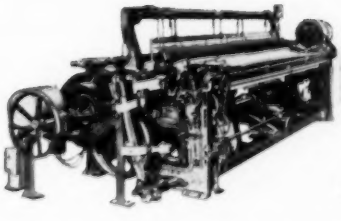

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TEXTONE

Textone, a textile processing agent composed essentially of Sodium Chlorite ($NaClO_2$), is particularly desirable because it bleaches cellulosic material without degradation of the fibers. Bleaching may be done on the acid or on the alkaline side, resulting in high whites and tensile strengths, low fluidities and improved aging characteristics. Full information on Textone is available on request. Shipped in 100-lb. drums. Point of manufacture, Niagara Falls, New York.

SODA ASH

Mathieson Light Soda Ash tests 58% sodium oxide and contains approximately 99.3% sodium carbonate. Shipped in 100-lb. multiwall paper bags, and in bulk. Points of manufacture, Saltville, Va., and Lake Charles, La.

CAUSTIC SODA

Niagara Falls Plant. 50% and 73% Liquid Caustic in 8,000- and 10,000-gal. tank cars. Also shipped from McIntosh, Huntsville and Anniston, Ala.

Saltville and Lake Charles Plants. Solid Caustic, 76%, in 700-lb. net drums, Flake Caustic in 100- and 400-lb. net drums, and 50% and 73% Liquid Caustic in 8,000- and 10,000-gal. tank cars.

A valuable handbook, "Mathieson Caustic Soda", containing complete information on the properties and handling of caustic soda, is available free of charge to plant men.

LIQUID CHLORINE

One of the leading commercial producers of liquid chlorine, Mathieson offers consumers experienced technical assistance, expert traffic counsel, and modern container equipment. Complete information on the physical and chemical properties of chlorine and on its handling is contained in the booklet, Mathieson Chlorine". Copies of this booklet are available on request.

Shipments are available in both multi-unit tank cars carrying 15 one-ton units, and in single-unit tank cars of 16 and 30 tons capacity. Shipped from Niagara Falls, N. Y., Saltville, Va., McIntosh and Huntsville, Ala.

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A free booklet, "Mathieson Anhydrous Ammonia", contains complete data on the properties and handling of this product.

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Methanol's solvent properties are used in textiles for dyes and resins and as the starting intermediate for Formaldehyde. Urea and melamine formaldehyde resins extend the versatility of fabrics by upgrading and modifying their properties with shrink-proofing and wrinkle-resisting finishes. Point of manufacture—Morgantown, W. Va.

HTH (HYPOCHLORITE)

HTH is a true calcium hypochlorite, the active element of which exists as $Ca(OCl)_2$. It contains over 70% available chlorine, is stable, uniform and easily soluble in water. HTH is particularly adaptable for bleaching, sterilizing and a variety of oxidizing purposes. Literature on the various uses of HTH is available upon request.

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60°Be., 77.67% H_2SO_4	Contact process
66°Be., 93.19% H_2SO_4	" "
98% H_2SO_4	" "
99% H_2SO_4	" "
100% H_2SO_4	" "
Oleum, 20%—104.5% H_2SO_4	" "

Shipments available in tank trucks, tank transports, tank cars and tank barges from Baltimore, Md.; in tank cars from North Little Rock, Ark., Bossier City, La., Beaumont, Tex., Port Arthur, Tex. and Pasadena (Houston), Tex.

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MID-NOVEMBER • 1953

Volume 103 **Number 11M**

KEYED ACCORDING TO READER INTEREST

SPINNER · WEAVER · KNITTER · FINISHER · ENGINEER

COTTON · SYNTHETICS · WOOL

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Y	W				Wool	31			W
Y	W		F		Synthetics	36	C	S	W
		K			Knitting	44	C	S	W
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Introduction

Here is your copy of the first annual BUYERS' GUIDE and REFERENCE DATA issue of TEXTILE WORLD, to be published from now on as an extra or 13th issue of the magazine. It has been conveniently tailored to meet your reference and buying needs for the next twelve months.

The research facilities and editorial experience of TEXTILE WORLD have been incorporated in this issue to make it the most complete, up-to-date, and easy-to-use source of technical reference and buying information possible.

KEEP IT HANDY THE YEAR AROUND! When you are planning, specifying, or buying in the textile market . . . here is the place to look!

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Yarn-Number Conversion Table

The column headed "Linen" also serves for other bast-fiber yarns and for the woolen cut system.

Grain weight for 12 yds. can be easily obtained by moving the decimal point one place to the left in the grain weight for 120 yds.

Grain weight for the following lengths can be easily obtained from grain weight for 100 yds.

(a) For 50 yds., by dividing by 2
(b) For 25 yds., by dividing by 4
(c) For 20 yds., by dividing by 5
(d) For 12½ yds., by dividing by 8
(e) For 10 yds., by dividing by 10
(f) For 1 yd., by dividing by 100

In the metric system, 496 yds. per lb. is the American equivalent of one kilometer per kilogram.

Typp 1,000 yds. per lb.	Runs 1,600 yds. per lb.	Cotton 840 yds. per lb.	Worsted 560 yds. per lb.	Linen 300 yds. per lb.	Grains per 120 yds.	Grains per 100 yds.	Drams per 1,000 yds.	Denier 05 gram per 450 meters	Metric 496 yds. per lb.	Grex Grams 10,000 meters	Yards per lb.
.20	.125	.24	.36	.67	4,200.	3,500.	1,280.	22,323	.4	24,800	200
.30	.19	.36	.54	1.	2,800.	2,333.3	853.33	14,882	.6	16,534	300
.40	.25	.48	.71	1.33	2,100.	1,750.	640.	11,161	.8	12,400	400
.56	.35	.67	1.	1.87	1,500.	1,250.	457.14	7,972	1.1	8,857	560
.60	.375	.71	1.07	2.	1,400.	1,166.6	426.66	7,441	1.2	8,267	600
.80	.50	.95	1.43	2.67	1,050.	875.	320.	5,581	1.6	6,200	800
.84	.525	1.	1.50	2.80	1,000.	833.33	304.76	5,315	1.7	5,905	840
.90	.56	1.07	1.61	3.	933.3	777.8	284.44	4,961	1.8	5,509	900
1.00	.63	1.19	1.79	3.33	840.	700.	256.	4,465	2.	4,960	1,000
1.12	.70	1.33	2.	3.73	750.	625.	228.57	3,986	2.3	4,428	1,120
1.20	.75	1.43	2.14	4.	700.	583.3	213.33	3,720	2.4	4,133	1,200
1.40	.88	1.67	2.50	4.67	600.	500.	182.86	3,189	2.8	3,543	1,400
1.50	.94	1.79	2.68	5.	560.	466.7	170.67	2,976	3.	3,306	1,500
1.60	1.	1.90	2.86	5.33	525.	437.5	160.	2,790	3.2	3,100	1,600
1.68	1.05	2.	3.	5.60	500.	416.7	152.38	2,657	3.4	2,952	1,680
1.80	1.13	2.14	3.21	6.	466.7	388.9	142.22	2,480	3.6	2,751	1,800
2.00	1.25	2.38	3.57	6.67	420.	350.	128.	2,232	4.	2,480	2,000
2.10	1.31	2.50	3.75	7.	400.	333.3	121.90	2,126	4.2	2,362	2,100
2.20	1.38	2.62	3.93	7.33	381.8	318.2	116.36	2,029	4.4	2,249	2,200
2.24	1.40	2.67	4.	7.47	375.	312.5	114.28	1,993	4.5	2,214	2,240
2.40	1.50	2.86	4.29	8.	350.	291.7	106.67	1,860	4.8	2,066	2,400
2.52	1.57	3.	4.50	8.40	333.3	277.8	101.59	1,772	5.1	1,966	2,520
2.60	1.63	3.10	4.64	8.67	323.1	269.2	98.46	1,717	5.2	1,907	2,600
2.70	1.69	3.21	4.82	9.	311.1	259.3	94.81	1,654	5.4	1,836	2,700
2.80	1.75	3.33	5.	9.33	300.	250.	91.43	1,595	5.6	1,771	2,800
3.00	1.88	3.57	5.36	10.	280.	233.3	85.33	1,488	6.1	1,653	3,000
3.20	2.	3.81	5.72	10.67	262.5	218.7	80.	1,395	6.5	1,547	3,200
3.30	2.06	3.93	5.89	11.	254.5	212.1	77.58	1,353	6.7	1,500	3,300
3.36	2.10	4.	6.	11.20	250.	208.3	76.19	1,329	6.8	1,476	3,360
3.40	2.13	4.05	6.07	11.33	247.1	205.9	75.29	1,313	6.9	1,458	3,400
3.60	2.25	4.28	6.43	12.	233.3	194.4	71.11	1,240	7.3	1,375	3,600
3.64	2.26	4.33	6.50	12.13	230.8	192.3	70.33	1,227	7.3	1,358	3,640
3.72	2.32	4.43	6.64	12.40	225.8	188.2	68.82	1,200	7.5	1,328	3,720
3.78	2.36	4.50	6.75	12.60	222.2	185.2	67.72	1,181	7.6	1,310	3,780
3.80	2.38	4.52	6.79	12.67	221.1	184.2	67.37	1,175	7.7	1,305	3,800
3.90	2.44	4.64	6.96	13.	215.4	179.5	65.64	1,145	7.9	1,269	3,900
3.92	2.45	4.67	7.	13.07	214.3	178.6	65.30	1,139	7.9	1,263	3,920
4.00	2.50	4.76	7.14	13.33	210.	175.	64.	1,116	8.1	1,240	4,000
4.06	2.54	4.83	7.25	13.53	206.9	172.4	63.05	1,100	8.2	1,216	4,060
4.20	2.63	5.	7.50	14.	200.	166.7	60.95	1,063	8.5	1,181	4,200
4.34	2.71	5.17	7.75	14.47	193.5	161.3	58.99	1,029	8.8	1,139	4,340
4.40	2.75	5.24	7.86	14.67	190.9	159.1	58.18	1,015	8.9	1,122	4,400
4.41	2.76	5.25	7.88	14.70	190.5	158.7	58.05	1,012	8.9	1,121	4,410
4.48	2.80	5.33	8.	14.93	187.5	156.3	57.14	997	9.	1,104	4,480
4.50	2.81	5.36	8.04	15.	186.7	155.6	56.89	993	9.1	1,098	4,500
4.60	2.88	5.48	8.21	15.33	182.6	152.2	55.65	971	9.3	1,074	4,600
4.62	2.89	5.50	8.25	15.40	181.8	151.5	55.41	966	9.3	1,068	4,620
4.76	2.97	5.67	8.50	15.87	176.5	147.1	53.78	938	9.6	1,039	4,760
4.80	3.	5.72	8.57	16.	175.	145.8	53.33	930	9.7	1,033	4,800
4.83	3.02	5.75	8.63	16.10	173.9	144.9	53.	924	9.7	1,027	4,830
4.90	3.06	5.83	8.75	16.33	171.4	142.9	52.24	911	9.9	1,009	4,900
4.96	3.10	5.91	8.86	16.53	169.4	141.1	51.61	900	10.0	997	4,960
5.00	3.13	5.95	8.93	16.67	168.	140.	51.20	893	10.1	992	5,000
5.04	3.15	6.	9.	16.80	166.7	138.9	50.79	886	10.2	983	5,040
5.10	3.19	6.07	9.11	17.	164.7	137.2	50.19	875	10.3	968	5,100
5.18	3.24	6.17	9.25	17.27	162.2	135.1	49.42	862	10.4	956	5,180
5.20	3.25	6.19	9.29	17.33	161.5	134.6	49.23	859	10.5	950	5,200
5.25	3.28	6.25	9.38	17.50	160.	133.3	48.76	850	10.6	944	5,250
5.32	3.32	6.33	9.50	17.73	157.9	131.6	48.12	839	10.7	927	5,320
5.40	3.38	6.43	9.64	18.	155.6	129.6	47.40	827	10.9	915	5,400
5.46	3.41	6.50	9.75	18.20	153.8	128.2	46.89	818	11.	903	5,460
5.60	3.50	6.67	10.	18.67	150.	125.	45.71	797	11.3	885	5,600
5.67	3.54	6.75	10.13	18.90	148.1	123.5	45.15	787	11.4	873	5,670
5.70	3.56	6.79	10.18	19.	147.4	122.8	44.91	783	11.5	868	5,700
5.80	3.63	6.90	10.36	19.33	144.8	120.7	44.14	770	11.7	850	5,800

Yarn-Number Conversion Table (*Continued*)

Typp 1,000 yds. per lb.	Runs 1,600 yds. per lb.	Cotton 840 yds. per lb.	Worsted 560 yds. per lb.	Linen 300 yds. per lb.	Grains per 120 yds.	Grains per 100 yds.	Drams per 1,000 yds.	Denier .05 gram per 450 meters	Metric 496 yds. per lb.	Grex Grams 10,000 meters	Yards per lb.
5.88	3.67	7.	10.50	19.60	142.9	119.	43.54	759	11.9	843	5,880
6.00	3.75	7.14	10.71	20.	140.	116.7	42.67	744	12.1	826	6,000
6.09	3.81	7.25	10.88	20.30	137.9	114.9	42.04	733	12.3	814	6,090
6.16	3.85	7.33	11.	20.53	136.4	113.6	41.56	725	12.4	805	6,160
6.20	3.88	7.38	11.07	20.67	135.5	112.9	41.29	720	12.5	800	6,200
6.30	3.94	7.50	11.25	21.	133.3	111.1	40.63	709	12.7	787	6,300
6.40	4.	7.62	11.43	21.33	131.2	109.4	40.	698	12.9	774	6,400
6.44	4.03	7.67	11.50	21.47	130.4	108.5	39.75	693	13.	770	6,440
6.51	4.07	7.75	11.63	21.70	129.	107.2	39.32	686	13.1	761	6,510
6.60	4.13	7.86	11.79	22.	127.3	106.1	38.79	676	13.3	751	6,600
6.72	4.20	8.	12.	22.10	125.	104.2	38.09	664	13.5	738	6,720
6.80	4.25	8.10	12.14	22.67	123.5	102.9	37.65	657	13.7	729	6,800
6.90	4.31	8.21	12.32	23.	121.7	101.5	37.10	647	13.9	718	6,900
6.93	4.33	8.25	12.38	23.10	121.2	101.	36.94	644	14.	715	6,930
7.00	4.38	8.33	12.50	23.33	120.	100.	36.57	638	14.1	708	7,000
7.14	4.46	8.50	12.75	23.8	117.6	98.	35.85	625	14.4	694	7,140
7.20	4.50	8.57	12.86	24.	116.7	97.2	35.56	620	14.5	689	7,200
7.28	4.55	8.67	13.	24.27	115.4	96.2	35.17	613	14.7	681	7,280
7.35	4.59	8.75	13.13	24.50	114.3	95.2	34.83	607	14.8	674	7,350
7.44	4.65	8.86	13.29	24.80	112.8	94.1	34.41	600	15.	660	7,440
7.50	4.69	8.93	13.39	25.	112.	93.3	34.13	595	15.1	661	7,500
7.56	4.73	9.	13.50	25.20	111.1	92.6	33.86	591	15.2	656	7,560
7.60	4.75	9.05	13.57	25.33	110.5	92.1	33.68	587	15.3	652	7,600
7.80	4.88	9.29	13.93	26.	107.7	89.8	32.82	572	15.7	635	7,800
7.84	4.90	9.33	14.	26.13	107.1	89.3	32.65	569	15.8	632	7,840
7.98	4.99	9.50	14.25	26.60	105.3	87.7	32.08	560	16.1	621	7,980
8.00	5.	9.52	14.29	26.67	105.	87.5	32.	558	16.1	620	8,000
8.10	5.06	9.64	14.46	27.	103.7	86.4	31.60	551	16.3	612	8,100
8.12	5.08	9.67	14.50	27.07	103.4	86.2	31.53	550	16.4	610	8,120
8.40	5.25	10.	15.	28.	100.	83.3	30.48	532	16.9	590	8,400
8.68	5.43	10.33	15.50	28.93	96.8	80.7	29.49	514	17.5	571	8,680
8.70	5.44	10.36	15.54	29.	96.6	80.5	29.43	513	17.5	570	8,700
8.80	5.50	10.48	15.71	29.33	95.5	79.6	29.09	507	17.7	564	8,800
8.82	5.51	10.50	15.75	29.40	95.2	79.4	29.02	506	17.8	562	8,820
8.96	5.60	10.67	16.	29.87	93.8	78.1	28.57	498	18.1	553	8,960
9.00	5.63	10.71	16.07	30.	93.3	77.8	28.44	496	18.1	551	9,000
9.20	5.75	10.95	16.43	30.67	91.3	76.1	27.83	485	18.5	539	9,200
9.24	5.78	11.	16.50	30.80	90.9	75.8	27.70	483	18.6	536	9,240
9.30	5.81	11.07	16.60	31.	90.3	75.3	27.53	480	18.7	533	9,300
9.52	5.96	11.33	17.	31.73	88.2	73.5	26.89	469	19.2	520	9,520
9.60	6.	11.43	17.14	32.	87.5	72.9	26.67	465	19.3	516	9,600
9.66	6.04	11.50	17.25	32.20	87.	72.5	26.50	462	19.5	513	9,660
9.90	6.19	11.79	17.68	33.	84.8	70.7	25.85	451	20.	500	9,900
9.92	6.20	11.81	17.72	33.07	84.7	70.6	25.80	450	20.	500	9,920
10.00	6.25	11.90	17.86	33.33	84.	70.	25.60	446	20.1	496	10,000
10.08	6.30	12.	18.	33.60	83.3	69.4	25.40	443	20.3	492	10,080
10.20	6.38	12.14	18.21	34.	82.4	68.6	25.10	438	20.6	486	10,200
10.40	6.50	12.38	18.57	34.67	80.8	67.3	24.62	429	21.	477	10,400
10.50	6.56	12.50	18.75	35.	80.	66.7	24.38	425	21.2	472	10,500
10.64	6.65	12.67	19.	35.47	78.9	65.8	24.06	420	21.4	466	10,640
10.80	6.75	12.86	19.29	36.	77.8	64.8	23.70	413	21.8	459	10,800
10.92	6.83	13.	19.50	36.40	76.9	64.1	23.44	409	22.	454	10,920
11.10	6.94	13.21	19.82	37.	75.7	63.1	23.06	402	22.4	447	11,100
11.20	7.	13.33	20.	37.33	75.	62.5	22.86	399	22.6	443	11,200
11.34	7.09	13.50	20.25	37.80	74.1	61.7	22.57	394	22.9	437	11,340
11.40	7.13	13.57	20.35	38.	73.7	61.4	22.46	392	23.	435	11,400
11.60	7.25	13.81	20.71	38.67	72.4	60.3	22.07	385	23.4	427	11,600
11.70	7.31	13.93	20.89	39.	71.8	59.8	21.88	382	23.6	424	11,700
11.76	7.35	14.	21.	39.20	71.4	59.5	21.77	380	23.7	421	11,760
12.00	7.50	14.29	21.43	40.	70.	58.3	21.33	372	24.2	413	12,000
12.30	7.69	14.64	21.96	41.	68.3	56.9	20.81	363	24.8	403	12,300
12.32	7.70	14.67	22.	41.07	68.2	56.8	20.78	362	24.8	402	12,320
12.40	7.75	14.76	22.15	41.33	67.7	56.5	20.65	360	25.	399	12,400
12.60	7.88	15.	22.50	42.	66.7	55.6	20.32	354	25.4	393	12,600
12.80	8.	15.24	22.86	42.67	65.6	54.7	20.	349	25.8	387	12,800
12.88	8.05	15.33	23.	42.93	65.2	54.4	19.88	347	26.	385	12,880
12.90	8.06	15.36	23.04	43.	65.1	54.3	19.85	346	26.	384	12,900
13.20	8.25	15.71	23.57	44.	63.6	53.	19.39	338	26.6	375	13,200
13.44	8.40	16.	24.	44.80	62.5	52.1	19.05	332	27.1	369	13,440
13.50	8.44	16.07	24.11	45.	62.2	51.9	18.96	331	27.2	367	13,500
13.60	8.50	16.19	24.29	45.33	61.8	51.5	18.82	328	27.4	364	13,600
13.80	8.63	16.43	24.64	46.	60.9	50.7	18.55	324	27.8	359	13,800
14.00	8.75	16.67	25.	46.67	60.	50.	18.29	319	28.2	354	14,000
14.10	8.81	16.79	25.18	47.	59.6	49.6	18.16	317	28.4	351	14,100
14.28	8.93	17.	25.50	47.60	58.8	49.	17.93	313	28.8	347	14,280
14.40	9.	17.14	25.71	48.	58.3	48.6	17.77	310	29.	344	14,400
14.56	9.10	17.33	26.	48.53	57.7	48.1	17.58	307	29.3	340	14,560
14.70	9.19	17.50	26.25	49.	57.1	47.6	17.41	304	29.6	337	14,700
14.80	9.25	17.62	26.43	49.33	56.8	47.3	17.30	302	29.8	335	14,800
14.88	9.30	17.72	26.57	49.61	56.4	47.	17.20	300	30.	333	14,880
15.00	9.38	17.86	26.79	50.	56.	46.7	17.07	298	30.2	330	15,000
15.12	9.45	18.	27.	50.40	55.6	46.3	16.93	295	30.5	328	15,120
15.20	9.50	18.10	27.14	50.67	55.3	46.1	16.84	294	30.6	326	15,200
15.30	9.56	18.21	27.32	51.	54.9	45.8	16.73	292	30.8	324	15,300
15.60	9.75	18.57	27.86	52.	53.8	44.9	16.41	286	31.4	317	15,600
15.68	9.80	18.67	28.	52.27	53.6	44.6	16.33	285	31.6	316	15,680
15.90	9.94	18.81	28.21	53.	52.8	44.	16.10	281	32.1	311	15,900
15.96	9.98	19.	28.50	53.20	52.6	43.9	16.04	280	32.2	310	15,960
16.00	10.	19.05	28.57	53.33	52.5	43.8	16.	279	32.2	310	16,000
16.20	10.13	19.29	28.93	54.	51.9	43.2	15.80	276	32.7	306	16,200
16.24	10.15	19.33	29.	54.13	51.7	43.1	15.76	275	32.7	305	16,240
16.50	10.31	19.64	29.46	55.	50.9	42.4	15.52	271	33.3	300	16,500
16.80	10.50	20.	30.	56.	50.	41.6	15.24	266	33.9	295	16,800
17.10	10.69	20.36	30.54	57.	49.1	40.9	14.97	261	34.5	289	17,100
17.36	10.85	20.67	31.	57.87	48.4	40.3	14.75	257	35.	285	17,360

Yarn-Number Conversion Table *(Continued)*

Typp 1,000 yds. per lb.	Runs 1,600 yds. per lb.	Cotton 840 yds. per lb.	Worsted 560 yds. per lb.	Linen 300 yds. per lb.	Grains per 120 yds.	Grains per 100 yds.	Drams per 1,000 yds.	Denier .05 gram per 450 meters	Metric 496 yds. per lb.	Grex Grams 10,000 meters	Yards per lb.
17.40	10.88	20.71	31.07	58.	48.2	40.2	14.71	257	35.1	284	17,400
17.60	11.	20.95	31.43	58.67	47.7	39.8	14.55	254	35.5	281	17,600
17.64	11.03	21.	31.50	58.80	47.6	39.7	14.51	253	35.6	281	17,640
17.70	11.06	21.07	31.61	59.	47.5	39.5	14.46	252	35.7	280	17,700
17.86	11.16	21.26	31.89	59.53	47.	39.2	14.33	250	36.	277	17,860
17.92	11.20	21.33	32.	59.73	46.9	39.	14.29	249	36.1	276	17,920
18.00	11.25	21.43	32.14	60.	46.7	38.9	14.22	248	36.3	275	18,000
18.30	11.44	21.79	32.68	61.	45.7	38.3	13.99	244	36.9	270	18,300
18.40	11.50	21.90	32.86	61.33	45.6	38.	13.91	243	37.1	268	18,400
18.48	11.55	22.	33.	61.60	45.5	37.9	13.85	242	37.3	268	18,480
18.60	11.63	22.14	33.21	62.	45.2	37.6	13.76	240	37.5	266	18,600
18.90	11.81	22.50	33.75	63.	44.4	37.	13.54	236	38.1	262	18,900
19.04	11.90	22.67	34.	63.47	44.1	36.8	13.45	235	38.4	260	19,040
19.20	12.	22.86	34.29	64.	43.8	36.5	13.33	233	38.7	258	19,200
19.32	12.07	23.	34.50	64.40	43.5	36.2	13.25	231	38.9	256	19.230
19.50	12.19	23.21	34.82	65.	43.1	35.9	13.13	229	39.3	254	19,500
19.60	12.25	23.33	35.	65.33	42.9	35.7	13.06	228	39.5	253	19,600
19.80	12.38	23.57	35.36	66.	42.4	35.4	12.93	226	39.9	250	19,800
20.00	12.50	23.81	35.71	66.67	42.	35.	12.80	223	40.2	248	20,000
20.10	12.56	23.93	35.89	67.	41.8	34.8	12.74	222	40.5	246	20,100
20.16	12.60	24.	36.	67.20	41.7	34.7	12.70	221	40.6	246	20,160
20.40	12.75	24.29	36.43	68.	41.2	34.3	12.55	219	41.1	243	20,400
20.70	12.94	24.64	36.96	69.	40.6	33.8	12.37	216	41.7	239	20,700
20.72	12.95	24.67	37.	69.07	40.6	33.8	12.36	216	41.8	239	20,720
20.80	13.	24.76	37.14	69.33	40.4	33.7	12.31	215	41.9	238	20,800
21.00	13.13	25.	37.50	70.	40.	33.3	12.19	213	42.3	236	21,000
21.28	13.30	25.33	38.	70.93	39.5	32.9	12.03	210	42.9	233	21,280
21.30	13.31	25.36	38.04	71.	39.4	32.9	12.02	210	42.9	232	21,300
21.60	13.50	25.71	38.57	72.	38.9	32.4	11.85	207	43.5	229	21,600
21.84	13.65	26.	39.	72.80	38.5	32.	11.72	204	44.	227	21,840
21.90	13.69	26.07	39.11	73.	38.4	32.	11.69	204	44.2	226	21,900
22.20	13.88	26.43	39.64	74.	37.8	31.5	11.53	201	44.8	223	22,200
22.32	13.95	26.57	39.86	74.41	37.6	31.4	11.47	200	45.	222	22,320
22.40	14.	26.67	40.	74.67	37.5	31.2	11.43	199	45.2	221	22,400
22.50	14.06	26.79	40.18	75.	37.3	31.1	11.38	198	45.4	220	22,500
22.68	14.18	27.	40.50	75.60	37.	30.9	11.29	197	45.7	218	22,680
22.80	14.25	27.14	40.72	76.	36.8	30.7	11.23	196	46.	217	22.800
22.96	14.35	27.33	41.	76.53	36.6	30.5	11.15	194	46.3	216	22,960
23.10	14.44	27.50	41.25	77.	36.4	30.3	11.08	193	46.6	214	23,100
23.40	14.63	27.86	41.79	78.	35.9	29.9	10.94	191	47.2	211	23,400
23.52	14.70	28.	42.	78.40	35.7	29.8	10.88	190	47.4	210	23,520
23.70	14.81	28.21	42.32	79.	35.4	29.5	10.80	188	47.8	209	23,700
24.00	15.	28.57	42.86	80.	35.	29.2	10.67	186	48.4	206	24,000
24.08	15.05	28.67	43.	80.27	34.9	29.1	10.63	185	48.5	206	24,080
24.30	15.19	28.78	43.18	81.	34.6	28.8	10.53	184	49.	204	24,300
24.36	15.23	29.	43.50	81.20	34.5	28.7	10.51	183	49.1	203	24,360
24.60	15.38	29.29	43.93	82.	34.1	28.5	10.41	182	49.6	201	24,600
24.64	15.40	29.33	44.	82.13	34.1	28.4	10.39	181	49.7	201	24,640
24.80	15.50	29.53	44.29	82.68	33.9	28.2	10.32	180	50.	200	24,800
25.20	15.75	30.	45.	84.	33.3	27.8	10.16	177	50.8	196	25,200
25.60	16.	30.48	45.71	85.33	32.8	27.3	10.	174	51.6	193	25,600
25.76	16.10	30.67	46.	85.87	32.6	27.2	9.94	173	51.9	192	25,760
25.80	16.13	30.71	46.07	86.	32.6	27.1	9.92	173	52.	192	25,800
26.04	16.27	31.	46.50	86.80	32.3	26.9	9.83	171	52.5	190	26,040
26.26	16.41	31.27	46.90	87.54	32.	26.7	9.75	170	53.	188	26,260
26.40	16.50	31.43	47.14	88.	31.8	26.5	9.70	169	53.2	187	26,400
26.88	16.80	32.	48.	89.60	31.3	26.	9.52	166	54.2	184	26,880
27.00	16.88	32.14	48.21	90.	31.1	25.9	9.48	165	54.4	183	27,000
27.20	17.	32.38	48.57	90.67	30.9	25.7	9.41	164	54.8	182	27,200
27.60	17.25	32.86	49.29	92.	30.4	25.4	9.28	162	55.6	179	27,600
27.72	17.32	33.	49.50	92.40	30.3	25.3	9.24	161	55.9	178	27,720
28.00	17.50	33.33	50.	93.33	30.	25.	9.14	159	56.5	177	28,000
28.20	17.63	33.57	50.36	94.	29.8	24.8	9.08	158	56.8	175	28,200
28.56	17.85	34.	51.	95.20	29.4	24.5	8.96	156	57.6	173	28,560
28.80	18.	34.29	51.43	96.	29.2	24.3	8.89	155	58.1	172	28,800
29.12	18.20	34.67	52.	97.07	28.8	24.	8.79	153	58.7	170	29,120
29.40	18.38	35.	52.50	98.	28.6	23.8	8.71	152	59.3	168	29,400
29.76	18.60	35.43	53.15	99.21	28.2	23.5	8.60	150	60.	166	29,760
30.00	18.75	35.71	53.57	100.	28.	23.3	8.53	149	60.5	165	30,000
30.24	18.90	36.	54.	100.80	27.8	23.1	8.47	148	61.	164	30,240
30.40	19.	36.19	54.29	101.33	27.6	23.	8.42	147	61.3	162	30,400
31.08	19.42	37.	55.50	103.60	27.	22.5	8.24	144	62.6	159	31,080
31.20	19.50	37.14	55.72	104.	26.9	22.4	8.21	143	62.9	158	31,200
31.36	19.60	37.33	56.	104.53	26.8	22.3	8.16	142	63.2	158	31,360
31.92	19.95	38.	57.	106.40	26.3	21.9	8.02	140	64.3	155	31,920
32.00	20.	38.10	57.14	106.67	26.3	21.9	8.	140	64.4	155	32,000
32.40	20.25	38.57	57.86	108.	25.9	21.6	7.90	138	65.3	152	32,400
32.48	20.30	38.67	58.	108.27	25.9	21.6	7.88	138	65.5	152	32,480
32.76	20.47	39.	58.50	109.20	25.6	21.4	7.81	136	66	151	32,760
33.60	21.	40.	60.	112.	25.	20.8	7.62	133	67.7	147	33,600
34.44	21.52	41.	61.50	114.80	24.4	20.3	7.43	130	69.4	144	34,440
34.72	21.70	41.33	62.	115.73	24.2	20.2	7.37	129	70.	142	34,720
34.80	21.75	41.43	62.14	116.	24.1	20.1	7.36	128	70.2	142	34,800
35.20	22.	41.90	62.86	117.33	23.9	19.9	7.27	127	71.	141	35,200
35.28	22.05	42.	63.	117.60	23.8	19.8	7.26	127	71.1	140	35,280
35.84	22.40	42.67	64.	119.47	23.4	19.5	7.14	125	72.3	138	35,840
36.00	22.50	42.86	64.29	120.	23.3	19.4	7.11	124	72.6	137	36,000
36.12	22.57	43.	64.50	120.40	23.3	19.4	7.09	124	72.8	137	36,120
36.80	23.	43.81	65.71	122.67	22.8	19.	6.96	121	74.2	134	36,800
36.96	23.10	44.	66.	123.20	22.7	18.9	6.93	121	74.5	134	36,960
37.20	23.25	44.29	66.43	124.	22.6	18.8	6.88	120	75.	133	37,200
37.80	23.62	45.	67.50	126.	22.2	18.5	6.77	118	76.2	131	37,800
38.08	23.80	45.33	68.	126.93	22.1	18.4	6.72	117	76.8	130	38,080

Yarn-Number Conversion Table *(Continued)*

Typp 1,000 yds. per lb.	Runs 1,600 yds. per lb.	Cotton 840 yds. per lb.	Worsted 560 yds. per lb.	Linen 300 yds. per lb.	Grains per 120 yds.	Grains per 100 yds.	Drams per 1,000 yds.	Denier .05 gram per 450 meters	Metric 496 yds. per lb.	Grex Grams 10,000 meters	Yards per lb.
38.40	24.	45.71	68.57	128.	21.9	18.2	6.67	116	77.4	129	38,400
38.64	24.15	46.	69.	128.80	21.7	18.1	6.63	115	77.9	128	38,640
39.20	24.50	46.67	70.	130.67	21.4	17.9	6.53	114	79.	126	39,200
39.48	24.67	47.	70.50	131.60	21.3	17.7	6.48	113	79.6	125	39,480
39.60	24.75	47.14	70.72	132.	21.2	17.7	6.46	113	79.8	125	39,600
40.00	25.	47.62	71.43	133.33	21.	17.5	6.40	112	80.6	124	40,000
40.32	25.20	48.	72.	134.40	20.8	17.4	6.35	111	81.3	122	40,320
40.80	25.50	48.57	72.86	136.	20.6	17.2	6.27	109	82.2	121	40,800
41.16	25.72	49.	73.50	137.20	20.4	17.	6.22	108	83.	120	41,160
41.44	25.90	49.33	74.	138.13	20.3	16.9	6.18	108	83.5	119	41,440
41.60	26.	49.52	74.29	138.67	20.2	16.8	6.15	107	83.9	119	41,600
42.00	26.25	50.	75.	140.	20.	16.7	6.10	106	84.7	118	42,000
42.56	26.60	50.67	76.	141.87	19.7	16.4	6.01	105	85.8	116	42,560
42.84	26.77	51.	76.50	142.80	19.6	16.3	5.98	104	86.4	115	42,840
43.20	27.	51.43	77.14	144.	19.4	16.2	5.93	103	87.1	114	43,200
43.68	27.30	52.	78.	145.60	19.2	16.	5.86	102	88.1	113	43,680
44.40	27.75	52.86	79.20	148.	18.9	15.8	5.76	101	89.5	111	44,400
44.52	27.82	53.	79.50	148.40	18.9	15.7	5.75	100	89.7	111	44,520
44.80	28.	53.33	80.	149.33	18.7	15.6	5.71	100	90.3	110	44,800
45.36	28.35	54.	81.	151.20	18.5	15.4	5.64	98	91.4	109	45,360
45.60	28.50	54.29	81.43	152.	18.4	15.4	5.61	98	91.9	108	45,600
45.92	28.70	54.67	82.	153.07	18.3	15.2	5.57	97	92.6	108	45,920
46.20	28.87	55.	82.50	154.	18.2	15.2	5.54	97	93.1	107	46,200
46.40	29.	55.24	82.86	154.67	18.1	15.1	5.51	96	93.5	106	46,400
46.80	29.25	55.71	83.57	156.	17.9	15.	5.47	95	94.3	105	46,800
47.04	29.40	56.	84.	156.80	17.8	14.9	5.44	95	94.8	105	47,040
47.88	29.92	57.	85.50	159.60	17.5	14.6	5.34	93	96.5	103	47,880
48.00	30.	57.14	85.71	160.	17.5	14.6	5.33	93	96.8	103	48,000
48.16	30.20	57.33	86.	160.53	17.4	14.5	5.31	93	97.1	102	48,160
48.72	30.45	58.	87.	162.40	17.2	14.4	5.25	92	98.2	101	48,720
49.20	30.75	58.57	87.86	164.	17.1	14.2	5.20	91	99.2	100	49,200
49.28	30.80	58.67	88.	164.27	17.	14.2	5.19	91	99.3	100	49,280
49.56	30.97	59.	88.50	165.20	17.	14.1	5.16	90	99.9	100	49,560
49.60	31.	59.05	88.57	165.33	16.9	14.1	5.16	90	100.	99	49,600
50.40	31.50	60.	90.	168.	16.7	13.9	5.07	89	101.6	98	50,400
51.20	32.	60.95	91.43	170.67	16.4	13.7	5.	87	103.2	96	51,200
51.24	32.02	61.	91.50	170.80	16.4	13.7	4.99	87	103.3	96	51,240
51.52	32.20	61.33	92.	171.73	16.3	13.6	4.96	87	103.9	96	51,520
51.60	32.25	61.43	92.14	172.	16.3	13.6	4.96	87	104.	96	51,600
52.08	32.55	62.	93.	173.60	16.1	13.4	4.91	86	105.	95	52,080
52.64	32.90	62.67	94.	175.47	16.	13.3	4.86	85	106.1	94	52,640
52.80	33.	62.86	94.28	176.	15.9	13.3	4.84	85	106.4	93	52,800
52.92	33.07	63.	94.50	176.40	15.9	13.2	4.83	84	106.7	93	52,920
53.76	33.60	64.	96.	179.20	15.6	13.	4.76	83	108.4	92	53,760
54.00	33.75	64.28	96.42	180.	15.6	13.	4.74	83	108.9	92	54,000
54.40	34.	64.76	97.18	181.33	15.4	12.9	4.70	82	109.7	90	54,400
54.60	34.12	65.	97.50	182.	15.4	12.8	4.68	82	110.1	90	54,600
54.88	34.30	65.33	98.	182.93	15.3	12.8	4.66	81	110.6	90	54,880
55.20	34.50	65.71	98.57	184.	15.2	12.7	4.63	81	111.3	89	55,200
55.44	34.65	66.	99.	184.80	15.2	12.6	4.61	80	111.8	89	55,404
56.00	35.	66.67	100.	186.67	15.	12.5	4.57	80	112.9	88	56,000
56.28	35.17	67.	100.50	187.60	14.9	12.4	4.54	79	113.5	87	56,280
56.40	35.25	67.14	100.71	188.	14.9	12.4	4.53	79	113.7	87	56,400
57.12	35.70	68.	102.	190.40	14.7	12.3	4.48	78	115.1	86	57,120
57.60	36.	68.57	102.86	192.	14.6	12.2	4.44	78	116.1	86	57,600
57.96	36.22	69.	103.50	193.20	14.5	12.1	4.41	77	116.8	85	57,960
58.24	36.40	69.33	104.	194.13	14.4	12.	4.39	77	117.4	85	58,240
58.80	36.75	70.	105.	196.	14.3	11.9	4.35	76	118.5	84	58,800
59.20	37.	70.47	105.71	197.33	14.2	11.8	4.32	75	119.3	83	59,200
59.36	37.10	70.67	106.	197.87	14.1	11.8	4.31	75	119.7	83	59,360
59.64	37.27	71.	106.50	198.80	14.1	11.7	4.29	75	120.2	83	59,640
60.00	37.50	71.42	107.12	200.	14.	11.7	4.26	74	121.	82	60,000
60.48	37.80	72.	108.	201.60	13.9	11.6	4.23	74	121.9	82	60,480
60.80	38.	72.38	108.57	202.67	13.8	11.5	4.21	73	122.6	81	60,800
61.20	38.25	72.86	109.28	204.	13.7	11.4	4.18	73	123.4	80	61,200
61.32	38.32	73.	109.50	204.40	13.7	11.4	4.17	73	123.6	80	61,320
61.60	38.50	73.33	110.	205.33	13.6	11.4	4.15	72	124.2	80	61,600
62.16	38.85	74.	111.	207.20	13.5	11.3	4.11	72	125.3	79	62,160
62.40	39.	74.28	111.43	208.	13.4	11.2	4.10	72	125.8	79	62,400
62.72	39.20	74.67	112.	209.07	13.4	11.2	4.08	71	126.4	79	62,720
63.00	39.37	75.	112.50	210.	13.3	11.1	4.06	71	127.	78	63,000
63.60	39.75	75.71	113.57	212.	13.2	11.	4.02	70	128.2	77	63,600
63.84	39.90	76.	114.	212.80	13.2	11.	4.01	70	128.7	77	63,840
64.00	40.	76.19	114.29	213.33	13.1	10.9	4.	70	129.	76	64,000
64.68	40.42	77.	115.50	215.60	13.	10.8	3.95	69	130.4	76	64,680
64.80	40.50	77.14	115.71	216.	13.	10.8	3.95	69	130.6	76	64,800
64.96	40.60	77.33	116.	216.53	12.9	10.8	3.94	69	131.	76	64,960
65.52	40.95	78.	117.	218.40	12.8	10.7	3.90	68	132.1	75	65,520
65.60	41.	78.09	117.14	218.67	12.8	10.7	3.90	68	132.2	75	65,600
66.00	41.25	78.58	117.86	220.	12.7	10.6	3.87	68	133.1	74	66,000
66.08	41.30	78.67	118.	220.27	12.7	10.6	3.87	67	133.2	74	66,080
67.20	42.	80.	120.	224.	12.5	10.4	3.80	66	135.5	73	67,200
68.69	42.93	81.77	122.65	228.97	12.2	10.2	3.73	65	138.5	72	68,690
74.41	46.51	88.58	132.87	248.03	11.3	9.4	3.44	60	150.	66	74,410
75.60	47.25	90.	135.	252.	11.1	9.3	3.39	59	152.4	65	75,600
81.17	50.73	96.63	144.95	270.58	10.3	8.6	3.15	55	163.6	60	81,170
84.00	52.50	100.	150.	280.	10.	8.3	3.05	53	169.4	59	84,000
89.29	55.81	106.29	159.44	297.64	9.4	7.8	2.87	50	180.	55	89,290
92.40	57.76	110.	165.	308.	9.1	7.6	2.77	48	186.3	53	92,400
97.44	60.90	116.	174.	324.80	8.6	7.2	2.63	46	196.4	50	97,440
99.21	62.01	118.11	177.16	330.71	8.5	7.1	2.58	45	200.	50	99,210
100.80	63.00	120.	180.	336.	8.3	6.9	2.54	44	203.2	49	100,800
111.61	69.76	132.87	199.31	372.04	7.5	6.3	2.29	40	225.	44	111,610
148.82	93.02	177.16	265.75	496.06	5.6	4.7	1.72	30	300.	33	148,820

Diameters of Yarns

ASHENHURST'S FORMULA

No one formula can express the diameters of all yarns. However, the rule developed by Ashenhurst is probably the most commonly accepted as being nearest correct for ordinary purposes. The formula goes back to the general rule, often used for cotton yarns, that the diameter is the inverse of the square root of the yards per pound.

The simplest form for Ashenhurst's formula is:

$$\text{Diameter in inches} = \frac{1}{k \times \sqrt{\text{yards per pound}}}$$

The values for k are needed to modify the yards per pound to get accurate figures. The values most commonly accepted are:

Cotton = .92, linen = .92, worsted (Fine) = .90, worsted (Medium) = .86, woolen = .85.

PEIRCE'S FORMULA

The actual diameter of yarns, measured, say, with a microscope, varies with twist, fiber denier, and other fiber properties. As a practical matter it is necessary to adopt some convention* regarding spun-yarn diameter, especially in applications of "cloth geometry" as developed by Peirce. Peirce assumed that cotton yarns had a bulk density of 0.91 grams per cubic centimeter and derived this formula for diameter of cotton yarns:

0.0358 ÷ square root of cotton yarn number.

Example: What is the conventional diameter of a 36s cotton yarn?

$$0.0358 \div \sqrt{36} = 0.0358 \div 6 = 0.00597 \text{ in.}$$

In practical computations, cotton yarns behave as though the "effective diameter" is as computed by this formula; soft yarns in interlacing with other yarns tend to become more compact and to approach a bulk density of 0.91 grams per cubic centimeter.

All fibers do not have the same fiber density.† Differences in diameter resulting from this fact may be most simply taken into account by assuming that yarns made of different fibers are equally as compact as cotton yarns. The formula for the conventional diameter in inches of yarn made of any fiber then becomes: 0.0438 ÷ sq. root fiber density × sq. root cotton yarn number. Fiber density is in grams per cubic centimeter.

Numerical Example: What is the conventional diameter of a nylon yarn of 36s cotton yarn number? The fiber density of nylon is 1.14.

$$0.0438 \div \sqrt{1.14} \times \sqrt{36} = 0.0438 \div 1.068 \times 6 = 0.00674 \text{ in.}$$

This value may be compared with 0.00597 for a 36s cotton yarn (cotton fiber density 1.50 gms. per cc.) computed above.

* These computed values are *conventional* diameters and suffice for most practical computations. They may usefully be employed until it is found that a problem requires the use of more nearly actual diameters.

† Fiber density must not be confused with bulk density of yarns.

Junction of Any Two Yarn Numbers Gives Size of Two-Ply Yarn

In the use of this table, the yarn numbers may be in any reciprocal system—cotton, worsted, etc.—but not in a direct system, such as denier. Both yarns must be in the same numbering system; for example, if a cotton yarn is plied with a worsted yarn, both yarn numbers must be in the cotton or in the worsted system.

The number found in the body of the table is the equivalent count of the ply yarn. For example, the figure in the table for plying a 10s yarn with a 20s yarn is 6.7, which means that the equivalent count of the ply yarn is 6.7. (If average singles count is used, the ply yarn should be 13.4/2).

Yarn No.	50	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6
6	5.4	5.3	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.7	4.6	4.5	4.4	4.2	4.0	3.8	3.4	3.0
8	6.9	6.9	6.8	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.3	6.2	6.1	6.0	5.9	5.7	5.5	5.3	5.1	4.8	4.4	4.0	
10	8.3	8.3	8.2	8.2	8.0	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.2	7.1	6.9	6.7	6.4	6.2	5.8	5.5	5.0		
12	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9	8.7	8.6	8.4	8.2	8.0	7.8	7.5	7.2	6.9	6.5	6.0			
14	10.9	10.8	10.7	10.6	10.5	10.4	10.2	10.0	9.9	9.7	9.5	9.3	9.1	8.9	8.6	8.2	7.9	7.5	7.0				
16	12.1	12.0	11.9	11.6	11.6	11.4	11.3	11.0	10.9	10.7	10.4	10.2	9.9	9.6	9.3	8.9	8.5	8.0					
18	13.2	13.1	12.9	12.8	12.6	12.4	12.2	12.0	11.8	11.5	11.3	11.0	10.6	10.3	9.9	9.5	9.0						
20	14.3	14.1	13.9	13.8	13.6	13.3	13.1	12.9	12.6	12.3	12.0	11.7	11.3	10.9	10.5	10.0							
22	15.3	15.1	14.9	14.7	14.4	14.2	13.9	13.7	13.4	13.0	12.7	12.3	11.9	11.5	11.0								
24	16.2	16.0	15.8	15.5	15.3	15.0	14.7	14.4	14.0	13.7	13.3	12.9	12.5	12.0									
26	17.1	16.9	16.6	16.4	16.1	15.8	15.4	15.1	14.7	14.4	13.9	13.5	13.0										
28	18.0	17.7	17.4	17.1	16.9	16.5	16.1	15.8	15.4	14.9	14.5	14.0											
30	18.8	18.5	18.2	17.9	17.5	17.1	16.8	16.4	15.8	15.5	15.0												
32	19.5	19.2	18.9	18.5	18.2	17.8	17.4	16.8	16.5	16.0													
34	20.2	19.9	19.6	19.2	18.8	18.4	17.9	17.5	17.0														
36	20.9	20.6	20.2	19.8	19.4	19.0	18.5	18.0															
38	21.6	21.2	20.8	20.4	20.0	19.5	19.0																
40	22.2	21.8	21.4	21.0	20.5	20.0																	
42	22.8	22.4	22.0	21.5	21.0																		
44	23.4	23.0	22.5	22.0																			
46	24.0	23.5	23.0																				
48	24.5	24.0																					
50	25.0																						

Courtesy Wildman Mfg. Co.

Standard Regains

Standard conditions for testing textile materials are 65% relative humidity at 70° F.

The table shows the generally accepted regains for various textile materials exposed to standard conditions. While these regains, except silk, are not recognized by law in this country, they are commonly used as a basis for testing.

Material	Recommended by	Regain
Raw cotton	ASTM D-13	7.0(%)
Cotton yarn	ASTM D-13	7.5
Mercerized yarn	Nat. Bureau of Standards	8.5
Cotton cloth (dyed or undyed)	U. S. Testing Co	6.5
Woolen yarn	ASTM D-13	13.0
Worsted, dry-spun yarn	ASTM D-13	15.0
Worsted, oil-spun yarn	ASTM D-13	13.0
Silk yarn	U. S. Standard	11.0
Acetate yarn	ASTM D-13	6.5
Rayon yarn	ASTM D-13	11.0

Yarns spun from mixed fibers should be calculated from the commercial regains of the fibers used in proportion to the percentage composition based on dry-fiber content.

Regains for the newer fibers, taken from TEXTILE WORLD's 1953 Synthetic-Fiber Table, are:

Nylon	4.0 (%)	X-51	1.5 (%)
Orlon	1.5	Dynel	0.3 to 0.4
Dacron	0.4	Vinyon HH	0.5
Cuprammonium	11 to 12.5	Saran	none
Fortisan	10.7	Polyethylene	none
Glass	none	Vicara	10.0
Acrilan	1.7		

Recommended Humidities

		Percent
Cotton	Picking	45 to 60
	Carding	45 to 55
	Combing	55 to 65
	Drawing	50 to 65
	Roving	50 to 60
	Spinning (ring)	50 to 65
	Spooling	60 to 70
	Twisting	60 to 70
	Warping	60 to 70
	Warp tying	60 to 70
	Weaving	70 to 85
	Cloth room	65 to 75
	Yarn and cloth conditioning	90 to 95
Wool	Carding	65 to 70
	Spinning	55 to 60
	Weaving	50 to 55
	Cloth or yarn room	55 to 65
Worsted—Bradford system	Carding	65 to 70
	Combing	60 to 70
	Drawing	50 to 60
	Roving	50 to 60
	Spinning	50 to 55
	Twisting	50 to 60
Worsted—French system	Carding	65 to 70
	Combing	65 to 75
	Drawing	70 to 80
	Spinning	75 to 80
Worsted—Bradford or French	Weaving	50 to 60
	Top or yarn conditioning	90 to 95
Silk and man-made fibers	Preparing	55 to 65
	Throwing	60 to 70
	Weaving	55 to 75
	Knitting	60 to 70

Courtesy Parks-Cramer Co.

Yarn-Numbering Constants

$$\text{Cotton yarn number} = \frac{1{,}000}{\text{grains for 120 yds.}} = \frac{\text{inches of yarn} \times .2315}{\text{weight in grains}} = \frac{\text{inches of yarn} \times .015}{\text{weight in grams}}$$

$$\text{Worsted yarn number} = \frac{1{,}000}{\text{grains for 80 yds.}} = \frac{\text{inches of yarn} \times .3475}{\text{weight in grains}} = \frac{\text{inches of yarn} \times .0225}{\text{weight in grams}}$$

$$\text{Woolen run} = \frac{218.75}{\text{grains for 50 yds.}} = \frac{\text{inches of yarn} \times .1215}{\text{weight in grains}} = \frac{\text{inches of yarn} \times .0079}{\text{weight in grams}}$$

$$\text{Silk denier} = \text{grains for 638 yds.} = \frac{\text{weight in grains} \times 22{,}968}{\text{inches of yarn}} = \frac{\text{weight in grams} \times 354{,}000}{\text{inches of yarn}}$$

$$\text{Denier} = \frac{\text{weight in grams} \times 9000}{\text{length in meters}}$$

Denier of 1 meter length = weight in milligrams × 9

Count and Weight Corrections for Regain

When standard conditions are not available, yarns, yarn numbers, and fabric weights may be corrected to show the equivalent yarn number or weight at standard conditions.

Recorded size = yarn number as found

Corrected size = equivalent yarn number, at the standard condition

Actual regain = regain in the sample as found

Standard regain = regain equivalent to the standard condition

Cotton, worsted, woolen, and linen yarns:

$$\text{Corrected size} = \frac{\text{recorded size} \times (100 + \text{actual regain})}{100 + \text{standard regain}}$$

Silk and rayon yarns:

$$\text{Corrected size} = \frac{\text{recorded size} \times (100 + \text{standard regain})}{100 + \text{actual regain}}$$

Fabrics:

$$\text{Corrected weight} = \frac{\text{recorded weight} \times (100 + \text{standard regain})}{100 + \text{actual regain}}$$

Strength Corrections for Regain

For cotton yarns and fabrics, there is a gain in strength with an increase or regain within the normal range of regains. The general equation for correcting for strength, developed by Prof. George B. Haven of MIT, is shown here. X is a constant representing the percent gain in strength for each 1% added regain. X varies with different yarns and fabrics.

Corrected breaking strength =

$$\frac{\text{recorded strength} \times 100 + (X \times \text{standard regain})}{100 + (X \times \text{actual regain})}$$

The values for X in the above equation for some specific materials are as follows:

Material	X	Range of regains
Cotton yarns	6.00	.. ..
Tire fabrics	7.00	3.0 to 6.5
	4.00	6.5 to 9.0
Osnaburgs	2.67	3.0 to 9.0
Sheeting	1.81	3.0 to 9.0

Regain Under Mill Conditions

In a series of tests, undertaken to qualify for membership in the Arkwrights, William B. Hodge found some interesting facts regarding the actual regains of cotton material in the mill.

The following paragraphs are taken from a summary in Textile World:

There were 38 tests made in yarn mills and 57 tests in cloth mills.

The average regain in the raw stock in the yarn mills was 8.92%.

The average regain in the raw stock in the cloth mills was 8.94%.

The average regain of all samples of raw stock was 8.93%.

The average regain of the finished yarn as shipped from the yarn mills was 5.37%.

The average regain of the finished yarn in the cloth mills was 4.73%.

The average regain in the finished cloth as shipped from the yarn mills was 6.6%.

Effect of Humidification

The average regain of finished yarn in yarn mills where humidifiers were running was 6.95%.

The average regain of yarn in yarn mills where humidifiers were not in operation or not installed in the finishing department was 4.44%.

Gain through operation of humidifiers: 2.5%.

The average regain in finished samples of cloth where humidifiers were not running in cloth room was 5.67%.

The average regain of finished cloth in mills where humidifiers were running in cloth room was 7.58%.

Gain through operation of humidifiers: 1.91%.

Centigrade-Fahrenheit Temperature Conversion Table

C.° ← F.°		C.° → F.°		C.° ← F.°		C.° → F.°		C.° ← F.°		C.° → F.°		C.° ← F.°		C.° → F.°	
-17.7	0	0	32	7.7	46	46	114.8	10.4	51	51	123.8	24.4	76	76	168.8
-17.2	1	1	33.8	8.2	47	47	116.6	11.1	52	52	125.6	25.0	77	77	170.6
-16.6	2	2	35.6	8.8	48	48	118.4	11.5	53	53	127.4	25.5	78	78	172.4
-16.1	3	3	37.4	9.3	49	49	120.2	12.1	54	54	129.2	26.2	79	79	174.2
-15.5	4	4	39.2	9.9	50	50	122.0	12.6	55	55	131.0	26.8	80	80	176.0
-15.0	5	5	41.0	-3.3	26	26	78.8	13.2	56	56	132.8	27.3	81	81	177.8
-14.4	6	6	42.8	-2.8	27	27	80.6	13.7	57	57	134.6	27.7	82	82	179.6
-13.9	7	7	44.6	-2.2	28	28	82.4	14.3	58	58	136.4	28.2	83	83	181.4
-13.3	8	8	46.4	-1.6	29	29	84.2	14.8	59	59	138.2	28.8	84	84	183.2
-12.7	9	9	48.2	-1.1	30	30	86.0	15.6	60	60	140.0	29.3	85	85	185.0
-12.2	10	10	50.0	-0.6	31	31	87.8	16.1	61	61	141.8	29.9	75	75	186.8
-11.6	11	11	51.8	0	32	32	89.6	16.6	62	62	143.6	30.4	87	87	188.6
-11.1	12	12	53.6	0.5	33	33	91.4	17.1	63	63	145.4	31.0	88	88	190.4
-10.5	13	13	55.4	1.1	34	34	93.2	17.7	64	64	147.2	31.5	89	89	192.2
-10.0	14	14	57.2	1.6	35	35	95.0	18.2	65	65	149.0	32.1	90	90	194.0
- 9.4	15	15	59.0	2.2	36	36	96.8	18.8	66	66	150.8	32.6	91	91	195.8
- 8.8	16	16	61.8	2.7	37	37	98.6	19.3	67	67	152.6	33.3	92	92	197.6
- 8.3	17	17	63.6	3.3	38	38	100.4	19.9	68	68	154.4	33.8	93	93	199.4
- 7.7	18	18	65.4	3.8	39	39	102.2	20.4	69	69	156.2	34.4	94	94	201.2
- 7.2	19	19	67.2	4.4	40	40	104.0	21.0	70	70	158.0	34.9	95	95	203.0
- 6.6	20	20	68.0	4.9	41	41	105.8	21.5	71	71	159.8	35.5	96	96	204.8
- 6.1	21	21	69.8	5.5	42	42	107.6	22.2	72	72	161.6	36.1	97	97	206.6
- 5.5	22	22	71.6	6.0	43	43	109.4	22.7	73	73	163.4	36.6	98	98	208.4
- 5.0	23	23	73.4	6.6	44	44	111.2	23.3	74	74	165.2	37.1	99	99	210.2
- 4.4	24	24	75.2	7.1	45	45	113.0	23.8	75	75	167.0	37.7	100	100	212.0
- 3.9	25	25	77.0												

Formulas: $C.^\circ = 5/9\,(F.^\circ - 32^\circ)$
$F.^\circ = 9/5\,C.^\circ + 32^\circ$

Table of Equal Measures

16 drams = 437.5 grains = one ounce
16 ounces = 7000 grains = one pound
One scruple = 20 grains
One cubic inch of water = 0.036 pounds
One cubic foot of water = 62.27 pounds = 1,728 cubic inches = 7.4805 gallons
One gill = 7.22 cubic inches = 0.25 pounds = four ounces
One pint = 28.875 cubic inches = one pound
One quart = 57.75 cubic inches = 2.1 pounds
One U. S. gallon of water at 62° F. (16.6° C.) = 231 cubic inches = 8.3 pounds
One Imperial gallon = 227.37 cubic inches = 10 pounds
One liter = 1,000 cubic centimeters
One liter of water weighs one kilogram = 1,000 grams
One gram = 1,000 milligrams
One kilogram = 1,000 grams = 2.2 pounds
One pound avoirdupois = 453.9 grams

Yarn Numbers Resulting When Yarns Are Combined

The yarn number resulting when two yarns are twisted together can be found by the following equation:

$$\frac{\text{First number} \times \text{second number}}{\text{First number} + \text{second number}} = \text{Equivalent number of the two combined}$$

When more than two sizes are put together, the simplest method of determining the resulting number is as follows:

100 ÷ first number = A
100 ÷ second number = B
100 ÷ third number = C
100 ÷ fourth number = D

100 ÷ resulting number = A + B + C + D or,
100 ÷ (A + B + C + D) = resulting number

Comparative Strength of Textile Fibers

	Grams per denier	Pounds per sq. in.		Grams per denier	Pounds per sq. in.
Viscose rayon –			Orlon	4.5	66,000
regular	2.0	39,000	Acrilan	3.0	55,000
medium	2.5	49,000	X-51	3.1	44,000
high	3.0	58,000	Dynel	3.0	50,000
special			Vinyon N	3.2	55,000
(Du Pont G)	5.0	97,000	Vinyon HH	0.8	14,000
Fortisan	7.0	136,000	Saran	2.0	15,- to 44,000
Acetate	1.3	22,000	Polyethylene	1.7	11,- to 30,000
Nylon – regular	5.0	73,000	Silk (boiled off),		
high	7.5	95,000	up to	4.5	72,000
Cuprammonium	1.6	38,000	Wool, up to	1.3	27,000
Protein fiber	1.2	18,000	Cotton	4 to 6	80,- to 120,000
Fiberglas			Ramie	6.5	125,000
regular	6.5	213,000	Linen	6.3	121,000
special	---	3,500,000	Steel, up to	4.6	460,000

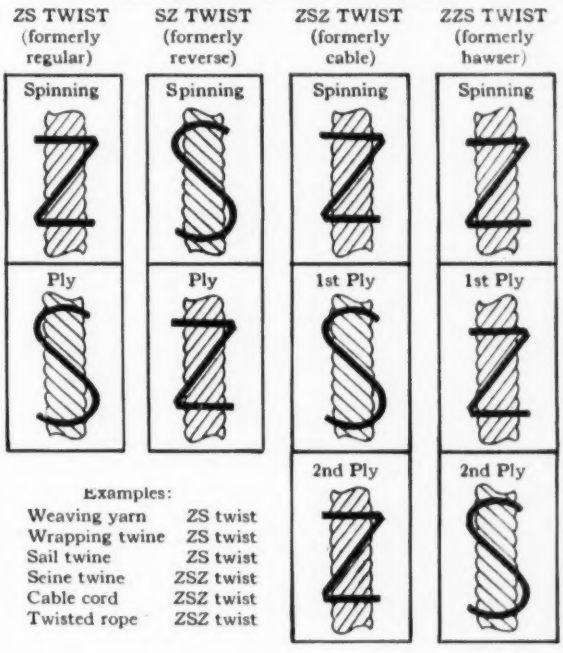
Courtesy The Saco-Lowell Bulletin

Table of Square Roots

No.	Square Root	No.	Square Root	No.	Square Root	No.	Square Root
.1	.316	8	2.828	39	6.245	70	8.366
.125	.353	9	3.000	40	6.324	71	8.426
.25	.500	10	3.162	41	6.403	72	8.485
.375	.610	11	3.316	42	6.480	73	8.544
.5	.710	12	3.464	43	6.557	74	8.602
.625	.790	13	3.605	44	6.633	75	8.660
.75	.866	14	3.741	45	6.708	76	8.717
.875	.935	15	3.872	46	6.782	77	8.774
1	1.000	16	4.000	47	6.855	78	8.831
1.125	1.061	17	4.123	48	6.928	79	8.888
1.25	1.119	18	4.242	49	7.000	80	8.944
1.375	1.172	19	4.358	50	7.071	81	9.000
1.5	1.230	20	4.472	51	7.141	82	9.055
1.625	1.273	21	4.582	52	7.211	83	9.110
1.75	1.330	22	4.690	53	7.280	84	9.165
1.875	1.370	23	4.795	54	7.348	85	9.219
2	1.414	24	4.898	55	7.416	86	9.273
2.25	1.500	25	5.000	56	7.483	87	9.327
2.5	1.580	26	5.099	57	7.549	88	9.380
2.75	1.650	27	5.196	58	7.615	89	9.433
3	1.732	28	5.291	59	7.681	90	9.486
3.25	1.800	29	5.385	60	7.745	91	9.539
3.5	1.870	30	5.477	61	7.810	92	9.591
3.75	1.930	31	5.567	62	7.874	93	9.643
4	2.000	32	5.656	63	7.937	94	9.695
4.25	2.060	33	5.744	64	8.000	95	9.746
4.5	2.120	34	5.830	65	8.062	96	9.797
4.75	2.180	35	5.916	66	8.124	97	9.848
5	2.236	36	6.000	67	8.185	98	9.899
6	2.449	37	6.082	68	8.246	99	9.949
7	2.645	38	6.164	69	8.309	100	10.000

Directions of Twist

Twist Types for Plied Yarns and Twines



Examples:

Weaving yarn	ZS twist
Wrapping twine	ZS twist
Sail twine	ZS twist
Seine twine	ZSZ twist
Cable cord	ZSZ twist
Twisted rope	ZSZ twist

Conversion Tables for Units of Measurement

To convert	To	Multiply by
Length		
Centimeters	Inches	0.3937
Inches	Centimeters	2.54
Meters	Inches	39.37
Inches	Meters	0.0254
Meters	Feet	3.3
Feet	Meters	0.3
Meters	Yards	1.1
Yards	Meters	0.9
Weight		
Ounces	Grams	28.35
Grams	Ounces	0.035
Grains	Grams	0.065
Grams	Grains	15.43
Volume		
Cubic feet	Gallons (U. S.)	7.5
Gallons (U. S.)	Cubic feet	0.13
Liters	Cubic feet	0.035
Cubic feet	Liters	28.33
Liters	Quarts	1.06
Quarts	Liters	0.95
Gallons (U. S.)	Liters	3.78
Liters	Gallons (U. S.)	0.26
Parts per		
Grams per liter	Ounces per gallon (U. S.)	0.133
Grams per kilogram	Ounces per 100 pounds	1.6
Grains per gallon (U. S.)	Parts per million	17.138
Parts per million	Grains per gallon (U. S.)	0.0583

Conversion of Picks to Yards

Yds. of cloth	Picks per inch																												
	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
1	0 360	0 4	0 5	0 6	0 7	0 7	0 8	0 9	0 9	1 0	1 1	1 2	1 2	1 3	1 4	1 4	1 5	1 6	1 7	1 7	1 8	1 9	1 9	2 0	2 1	2 2	2 2	2 3	2 4	2 4	2 5
2	0 720	0 9	1 0	1 2	1 3	1 4	1 6	1 7	1 9	2 0	2 2	2 3	2 5	2 6	2 7	2 9	3 0	3 2	3 3	3 5	3 6	3 7	3 9	4 0	4 2	4 3	4 5	4 6	4 8	4 9	5 0
3	1 080	1 3	1 5	1 7	1 9	2 2	2 4	2 6	2 8	3 0	3 2	3 5	3 7	3 9	4 1	4 3	4 5	4 8	5 0	5 2	5 4	5 6	5 8	6 0	6 3	6 5	6 7	6 9	7 1	7 3	7 6
4	1 440	1 7	2 0	2 3	2 6	2 9	3 2	3 5	3 7	4 0	4 3	4 6	4 9	5 2	5 5	5 8	6 0	6 3	6 6	6 9	7 2	7 5	7 8	8 1	8 4	8 6	8 9	9 2	9 5	9 8	10
5	1 800	2 2	2 5	2 9	3 2	3 6	4 0	4 3	4 7	5 0	5 4	5 8	6 1	6 5	6 8	7 2	7 6	7 9	8 3	8 6	9 0	9 4	9 7	10	10	11	11	12	12	12	13
6	2 160	2 6	3 0	3 5	3 9	4 3	4 8	5 2	5 6	6 0	6 5	6 9	7 3	7 8	8 2	8 6	9 1	9 5	9 9	10	11	11	12	12	13	13	13	14	14	15	15
7	2 520	3 0	3 5	4 0	4 5	5 0	5 5	6 0	6 5	7 1	7 6	8 1	8 6	9 1	9 6	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18
8	2 880	3 5	4 0	4 6	5 2	5 8	6 3	6 9	7 5	8 1	8 6	9 2	9 8	10	11	12	12	13	13	14	15	15	16	16	17	17	18	18	19	20	20
9	3 240	3 9	4 5	5 2	5 8	6 5	7 1	7 7	8 4	9 1	9 7	10	11	12	12	13	14	14	15	16	16	17	18	18	19	19	20	21	22	22	23
10	3 600	4 3	5 0	5 8	6 5	7 2	7 9	8 7	9 3	10	11	12	12	13	14	15	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25
11	3 960	4 7	5 5	6 3	7 1	7 9	8 7	9 5	10	11	12	13	14	14	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28
12	4 320	5 2	6 0	6 9	7 8	8 6	9 5	10	11	12	13	14	15	16	16	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	30
13	4 680	5 6	6 6	7 5	8 4	9 4	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	25	26	27	28	29	30	31	32	33
14	5 040	6 0	7 1	8 1	9 1	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
15	5 400	6 5	7 6	8 6	9 7	11	12	13	14	15	16	17	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	35	36	37	38
16	5 760	6 9	8 1	9 2	10	12	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30	31	32	33	35	36	37	38	39	40
17	6 120	7 3	8 6	9 8	11	12	14	15	16	17	18	20	21	22	23	25	26	27	28	30	31	32	33	34	36	37	38	39	41	42	43
18	6 480	7 8	9 1	10	12	13	14	16	17	18	19	21	22	24	25	26	27	29	30	31	33	34	35	36	38	39	40	42	43	44	45
19	6 840	8 2	9 6	11	12	14	15	17	18	19	21	22	23	25	26	27	29	30	31	33	34	36	37	38	40	41	43	44	45	47	48
20	7 200	8 6	10	12	13	15	16	17	19	20	22	23	25	26	27	29	30	32	33	35	36	38	39	40	42	43	45	46	48	49	51
21	7 560	9 1	11	12	14	15	17	18	20	21	23	24	26	27	29	30	32	33	35	36	38	39	41	42	44	45	47	48	50	52	53
22	7 920	9 5	11	13	14	16	18	19	21	22	24	25	27	29	30	32	33	35	37	38	40	41	43	44	46	48	49	51	52	54	56
23	8 280	10	12	13	15	17	18	20	22	23	25	27	28	30	31	33	35	37	38	40	42	43	45	46	48	50	51	53	55	56	58
24	8 640	10	12	14	16	17	19	21	23	24	26	28	30	31	33	35	36	38	40	42	43	45	47	48	50	52	54	55	57	59	61
25	9 000	11	13	15	16	18	20	22	24	25	27	29	31	33	34	36	38	40	42	43	45	47	49	51	52	54	56	58	60	61	63
26	9 360	11	13	15	17	19	21	23	25	26	28	30	32	34	36	38	39	41	43	45	47	49	51	53	54	56	58	60	62	64	66
27	9 720	12	14	16	18	20	22	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	56	58	60	62	64	66	68
28	10 080	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	65	67	69	71
29	10 440	13	15	17	19	21	23	25	27	29	31	33	35	38	40	42	44	46	48	50	52	54	56	58	61	63	65	67	69	71	73
30	10 800	13	15	17	19	22	24	26	28	30	32	35	37	39	41	43	45	48	50	52	54	56	58	60	63	65	67	69	71	74	76
31	11 160	13	16	18	20	22	25	27	29	31	33	36	38	40	43	45	47	49	51	54	56	58	60	63	65	67	69	72	74	76	78
32	11 520	14	16	18	21	23	25	28	30	32	35	37	39	42	44	46	48	51	53	55	58	60	62	65	67	69	72	74	76	78	81
33	11 880	14	17	19	22	24	26	29	31	33	36	38	41	43	45	48	50	52	55	57	60	62	64	67	69	71	74	76	79	81	83
34	12 240	15	17	20	22	25	27	30	32	34	37	39	42	44	47	49	52	54	56	59	61	64	66	69	71	74	76	78	81	83	86
35	12 600	15	18	20	23	25	28	30	33	35	38	40	43	45	48	50	53	56	58	61	63	66	68	71	73	76	78	81	83	86	88
36	12 960	16	18	21	24	26	29	31	34	36	39	42	44	47	49	52	54	57	60	62	65	67	70	73	75	78	80	83	86	88	91
37	13 320	16	19	21	24	27	29	32	35	37	40	43	46	48	51	53	56	59	61	64	67	69	72	75	77	80	83	85	88	91	93
38	13 680	16	19	22	25	27	30	33	36	38	41	44	47	49	52	55	58	60	63	66	69	71	74	77	79	82	85	88	90	93	96
39	14 040	17	20	23	25	28	31	34	37	39	42	45	48	51	54	56	59	62	65	67	70	73	76	79	82	84	87	90	93	96	98
40	14 400	17	20	23	26	29	32	35	38	40	43	46	49	52	55	58	61	63	66	69	72	75	78	81	84	87	89	92	95	98	101
41	14 760	18	21	24	27	30	33	36	39	41	44	47	50	53	56	59	62	65	68	71	74	77	80	83	86	89	92	95	98	100	103
42	15 120	18	21	24	27	30	33	36	39	42	45	49	52	54	58	61	64	67	70	73	76	79	82	85	88	91	94	97	100	103	106
43	15 480	19	22	25	28	31	34	37	40	43	46	50	53	56	59	62	65	68	71	74	78	81	84	87	90	93	96	99	102	105	108
44	15 840	19	22	25	29	32	35	38	41	44	48	51	54	57	60	63	67	70	73	76	79	82	86	89	92	95	98	101	105	108	111
45	16 200	19	23	26	29	33	36	39	42	45	49	52	55	58	62	65	68	71	75	78	81	84	88	91	94	97	101	104	107	110	114
46	16 560	20	23	27	30	33	37	40	43	46	50	53	56	60	63	66	70	73	76	80	83	86	90	93	96	99	103	106	109	113	116
47	16 920	20	24	27	31	34	37	41	44	47	51	54	58	61	64	68	71	75	78	81	85	88	91	95	98	102	105	108	112	115	119
48	17 280	21	24	28	31	35	38	42	45	48	52	55	59	62	66	69	73	76	80	83	87	90	93	97	100	104	107	111	114	118	121
49	17 640	21	25	28	32	35	39	42	46	49	53	57	60	64	67	71	74	78	81	85	88	92	95	99	102	106	109	113	117	120	124
50	18 000	22	25	29	33	36	40	43	47	51	54	58	61	65	69	72	76	79	83	87	90	94	97	101	105	108	112	115	119	123	126
51	18 360	22	26	29	33	37	40	44	48	52	55	59	63	66	70	74	77	81	85	88	92	96	99	103	107	110	114	118	121	125	129
52	18 720	23	26	30	34	38	41	45	49	53	56	60	64	67	71	75	79	82	86	90	94	97	101	105	109	112	116	120	124	127	131
53	19 080	23	27	30	34	38	42	46	50	54	57	61	65	69	73	76	80	84	88	92	96	99	103	107	111	115	118	122	126	130	134
54	19 440	24	27	31	35	39	43	47	51	55	58	62	66	70	74	78	82	86	90	93	97	101	105	109	113	117	121	125	128	132	136
55	19 800	24	28	32	36	40	44	48	52	56	59	63	67	71	75	79	83	87	91	95	99	103	107	111	115	119	123	127	131	135	139
56	20 160	24	28	32	36	40	44	48	53	57	61	65	69	73	77	81	85	89	93	97	101	105	109	113	117	121	125	129	133	137	141
57	20 520	25	29	33	37	41	45	49	53	58	62	66	70	74	78	82	86	90	94	99	103	107	111	115	119	123	127	131	136	140	144
58	20 880	25	29	33	38	42	46	50	54	59	63	67	71	75	79	84	88	92	96	100	105	109	113	117	121	125	130	134	138	142	146
59	21 240	26	30	34	38	43	47	51	55	60	64	68	72	77	81	85	89	94	98	102	106	111	115	119	123	128	132	136	140	144	149
60	21 600	26	30	35	39	43	48	52	56	61	65	69	74	78	82	87	91	95	99	104	108	112	117	121	125	130	134	138	143	147	151
61	21 960	26	31	35	40	44	48	53	57	62	66	70	75	79	84	88	92	97	101	106	110	114	119	123	127	132	136	141	145	149	154
62	22 320	27	31	36	40	45	49	54	58	63	67	72	76	80	85	89	94	98	103	107	112	116	121	125	130	134	138	143	147	152	156
63	22 680	27	32	36	41	45	50	55	59	64	68	73	77	82	86	91	95	100	104	109	114	118	123	127	132	136	141	145	150	154	159
64	23 040	28	32	37	42	46	51	55	60	65	69	74	78	83	88	92	97	101	106	111	115	120	125	129	134	138	143	148	152	157	161
65	23 400	28	33	38	42	47	52	56	61	66	70	75	80	84	89	94	98	103	108	112	117	122	126	131	136	141	145	150	155	159	164
66	23 760	29	33	38	43	48	52	57	62	67	71	76	81	86	90	95	100	105	109	114	119	124	128	133	138	143	147	152	157	162	166
67	24 120	29	34	39	44	48	53	58	63	68	72	77	82	87	92	97	101	106	111	116	121	126	130	135	140	145	150	154	159	164	169
68	24 480	30	34	39	44	49	54	59	64	69	74	78	83	88	93	98	103	108	113	118	123	127	132	137	142	147	152	157	162	167	171
69	24 840	30	35	40	45	50	55	60	65	70	75	80	85	90	94	99	104	109	114	119	124	129	134	139	144	149	154	159	164	169	174
70	25 200	30	35	40	45	51	56	61	66	71	76	81	86	91	96	101	106	111	116	121	126	131	136	141	146	151	156	161	166	171	176
71	25 560	31	36	41	46	51	56	61	67	72	77	82	87	92	97	102	107	113	118	123	128	133	138	143	148	153	159	164	169	174	179
72	25 920	31	36	42	47	52	57	62	67	73	78	83	88	93	99	104	109	114	119	125	130	135	140	145	150	156	161	166	171	176	181
73	26 280	32	37	42	47	53	58	63	68	74	79	84	89	95	100	105	110	116	121	126	132	137	142	147	153	158	163	168	174	179	184
74	26 640	32	37	43	48	53	59	64	69	75	80	85	91	96	101	107	112	117	123	128	133	139	144	149	155	160	165	171	176	181	187
75	27 000	33	38	43	49	54	60	65	70	76	81	87	92	97	103	108	114	119	124	130	135	141	146	151	157	162	168	173	178	184	189
76	27 360	33	38	44	49	55	60	66	71	77	82	88	93	99	104	110	115	120	126	131	137	142	148	153	159	164	170	175	181	186	192
77	27 720	33	39	44	50	56	61	67	72	78	83	89	94	100	105	111	117	122	128	133	139	144	150	155	161	166	172	178	183	189	194
78	28 080	34	39	45	51	56	62	67	73	79	84	90	96	101	107	112	118	124	129	135	141	146	152	157	163	169	174	180	185	191	197
79	28 440	34	40	46	51	57	63	68	74	80	85	91	97	102	108	114	120	125	131	137	142	148	154	159	165	171	176	182	188	193	199
80	28 800	35	40	46	52	58	63	69	75	81	87	92	98	104	110	115	121	127	133	138	144	150	156	161	167	173	179	184	190	196	202
81	29 160	35	41	47	53	58	64	70	76	82	88	93	99	105	111	117	123	128	134	140	146	152	158	163	169	175	181	187	193	198	204
82	29 520	36	41	47	53	59	65	71	77	83	89	95	100	106	112	118	124	130	136	142	148	154	160	165	171	177	183	189	195	201	207
83	29 880	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	155	161	167	173	179	185	191	197	203	209
84	30 240	36	42	48	55	61	67	73	79	85	91	97	103	109	115	121	127	133	139	145	151	157	163	169	175	182	188	194	200	206	212
85	30 600	37	43	49	55	61	67	74	80	86	92	98	104	110	116	123	129	135	141	147	153	159	165	171	178	184	190	196	202	208	214
86	30 960	37	43	50	56	62	68	74	81	87	93	99	105	112	118	124	130	136	143	149	155	161	167	173	180	186	192	198	204	211	217
87	31 320	38	44	50	56	63	69	75	82	88	94	100	107	113	119	125	132	138	144	150	157	163	169	175	182	188	194	201	207	213	219
88	31 680	38	44	51	57	63	70	76	82	89	95	101	108	114	120	127	133	139	146	152	159	165	171	178	184	190	197	203	209	215	222
89	32 040	39	45	51	58	64	71	77	83	90	96	103	109	115	122	128	135	141	147	154	160	167	173	180	186	192	199	205	212	218	224
90	32 400	39	45	52	58	65	71	78	84	91	97	104	111	117	123	130	136	143	149	156	162	169	175	182	188	195	201	207	214	220	227
91	32,760	39	46	53	59	66	72	79	85	92	98	105	112	118	125	131	138	144	151	157	164	170	177	184	190	197	203	210	216	223	229
92	33,120	40	46	53	60	66	73	80	86	93	99	106	113	119	126	133	139	146	152	159	166	172	179	186	192	199	205	212	219	225	232
93	33,480	40	47	54	60	67	74	80	87	94	101	107	114	121	127	134	141	147	154	161	168	174	181	188	194	201	208	214	221	228	234
94	33,840	41	47	54	61	68	75	81	88	95	102	108	115	122	129	135	142	149	156	163	169	176	183	190	196	203	210	217	223	230	237
95	34,200	41	48	55	62	69	75	82	89	96	103	110	116	123	130	137	144	151	157	164	171	178	185	192	198	205	212	219	226	233	239
96	34,560	42	48	55	62	69	76	83	90	97	104	111	118	125	131	138	145	152	159	166	173	180	187	194	201	207	214	221	228	235	242
97	34,920	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210	217	224	231	237	244
98	35,280	42	49	57	64	71	78	85	92	99	106	113	120	127	134	141	148	155	162	169	177	184	191	198	205	212	219	226	233	240	247
99	35,640	43	50	57	64	71	79	86	93	100	107	114	121	128	136	143	150	157	164	171	178	185	193	200	207	214	221	228	235	242	250
100	36,000	43	50	58	65	72	79	86	94	101	108	115	123	130	137	144	151	158	166	173	180	187	195	202	209	216	223	231	238	245	252

This table, compiled by W. F. Perry and first presented in TEXTILE WORLD, is calculated to nearest thousand picks.

Picks per inch																											Yds. of cloth
72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	
2.6	2.7	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.2	3.3	3.4	3.5	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.0	4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	1
5.2	5.3	5.5	5.6	5.8	5.9	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	8.5	8.6	8.8	8.9	9.1	9.2	9.4	2
7.8	8.0	8.2	8.4	8.6	8.9	9.1	9.3	9.5	9.7	9.9	10	10	11	11	11	11	11	12	12	12	12	13	13	13	13	13	14	14	14	3
10	11	11	11	12	12	12	12	13	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	17	18	18	18	18	19	4
13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	18	19	19	20	20	20	21	21	21	22	22	22	23	23	23	5
16	16	16	17	17	18	18	19	19	19	20	20	21	21	22	22	22	23	24	24	24	25	25	26	26	26	27	27	28	28	6
18	19	19	20	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	32	33	7
21	21	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	30	31	32	32	33	33	34	35	35	36	36	37	37	8
24	24	25	25	26	27	27	28	29	29	30	31	31	32	33	33	34	34	35	36	36	37	37	38	38	39	40	40	41	42	9
26	27	27	28	29	30	30	31	32	33	33	34	35	35	36	37	38	38	39	40	40	41	42	43	43	44	45	45	46	47	10
29	29	30	31	32	33	33	34	35	36	37	37	38	39	40	40	41	42	43	44	44	45	46	47	48	48	49	50	51	52	11
31	32	33	34	35	36	36	37	38	39	40	41	42	42	43	44	45	46	47	48	48	49	50	51	52	53	54	55	55	56	12
34	35	36	37	38	39	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	53	54	55	56	57	58	59	60	61	13
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	14
39	40	41	42	43	44	45	46	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	65	66	67	68	69	70	15
42	43	44	45	46	47	49	50	51	52	53	54	55	57	58	59	60	61	62	63	65	66	67	68	69	70	72	73	74	75	16
44	46	47	48	49	50	52	53	54	55	56	58	59	60	61	63	64	65	66	67	69	70	71	73	74	75	76	77	78	80	17
47	48	49	51	52	53	54	56	57	58	60	61	62	64	65	66	67	69	70	71	73	74	75	77	78	79	80	82	83	84	18
49	51	52	54	55	56	58	59	60	62	63	64	66	67	69	70	71	73	74	75	77	78	79	81	82	84	85	86	88	89	19
52	53	55	56	58	59	61	62	63	65	66	68	69	71	72	74	75	76	78	79	81	82	84	85	87	88	89	91	92	94	20
54	56	58	59	61	62	64	65	67	68	70	71	73	74	76	77	79	80	82	83	85	86	88	89	91	92	94	95	97	98	21
57	59	60	62	63	65	67	68	70	71	73	75	76	78	79	81	82	84	86	87	89	90	92	94	95	97	98	100	101	103	22
60	61	63	65	66	68	70	71	73	75	76	78	80	81	83	85	86	88	90	91	93	94	96	98	99	101	103	104	106	108	23
62	64	66	67	69	71	73	74	76	78	80	81	83	85	87	88	90	92	93	95	97	99	100	102	104	106	107	109	111	112	24
65	67	69	70	72	74	76	78	79	81	83	85	87	88	90	92	94	96	97	99	101	103	105	106	108	110	112	114	115	117	25
67	69	71	73	75	77	79	81	82	84	86	88	90	92	94	96	97	99	101	103	105	107	109	111	112	114	116	118	120	122	26
70	72	74	76	78	80	82	84	86	88	90	91	93	95	97	99	101	103	105	107	109	111	113	115	117	119	121	123	125	126	27
73	75	77	79	81	83	85	87	89	91	93	95	97	99	101	103	105	107	109	111	113	115	117	119	121	123	125	127	130	132	28
75	77	79	82	84	86	88	90	92	94	96	98	100	102	105	107	109	111	113	115	117	119	121	123	125	128	130	132	134	136	29
78	80	82	84	87	89	91	93	95	97	99	102	104	106	108	110	112	115	117	119	121	123	125	127	130	132	134	136	138	141	30
80	83	85	87	89	92	94	96	98	101	103	105	107	109	112	114	116	118	121	123	125	127	130	132	134	136	138	141	143	145	31
83	85	88	90	92	95	97	99	101	104	106	108	111	113	115	118	120	122	125	127	129	131	134	136	138	141	143	145	148	150	32
86	88	90	93	95	98	100	102	105	107	109	112	114	117	119	121	124	126	128	131	133	136	138	140	143	145	147	150	152	155	33
88	91	93	96	98	100	103	105	108	110	113	115	118	120	123	125	127	130	132	135	137	140	142	144	147	149	152	154	157	159	34
91	93	96	98	101	103	106	108	111	114	116	119	121	124	126	129	131	134	136	139	141	144	146	149	151	154	156	159	161	164	35
93	96	99	101	104	106	109	111	114	117	119	122	124	127	130	132	135	137	140	143	145	148	150	153	156	158	161	163	165	168	36
96	99	101	104	107	109	112	115	117	120	123	125	128	131	133	136	139	141	144	147	149	152	155	157	160	163	165	168	170	173	37
98	101	104	107	109	112	115	118	120	123	126	129	131	134	137	140	142	145	148	150	153	156	159	161	164	167	170	172	175	178	38
101	104	107	110	112	115	118	121	124	126	129	132	135	138	140	143	146	149	152	154	157	160	163	166	168	171	174	177	180	183	39
104	107	109	112	115	118	121	124	127	130	132	135	138	141	144	147	150	153	156	158	161	164	167	170	173	176	179	181	184	187	40
106	109	112	115	118	121	124	127	130	133	136	139	142	145	148	151	154	156	159	162	165	168	171	174	177	180	183	186	189	192	41
109	112	115	118	121	124	127	130	133	136	139	142	145	148	151	154	157	160	163	166	169	172	175	178	181	184	187	191	194	197	42
111	115	118	121	124	127	130	133	136	139	143	146	149	152	155	158	161	164	167	170	173	176	180	183	186	189	192	195	198	201	43
114	117	120	124	127	130	133	136	139	143	146	149	152	156	159	162	165	168	172	175	178	181	185	189	192	195	199	202	205	209	44
117	120	123	126	130	133	136	139	143	146	149	152	156	159	162	166	169	172	176	179	182	185	189	192	196	200	203	206	210	213	45
119	123	126	129	132	136	139	142	146	149	152	156	159	162	166	169	173	176	179	183	186	190	193	196	200	203	207	211	214	217	46
122	125	129	132	135	139	142	145	149	152	156	159	162	166	169	173	176	180	183	187	190	194	197	201	204	207	211	214	218	221	47
124	128	131	135	138	142	145	149	152	156	159	162	166	169	173	176	180	183	187	191	194	198	201	205	208	212	215	219	222	226	48
127	131	134	138	141	145	148	152	155	159	162	166	169	173	176	180	184	187	191	194	198	202	205	209	212	216	220	223	227	230	49
130	133	137	140	144	148	151	155	158	162	166	169	173	176	180	184	187	191	194	198	202	205	209	213	217	220	224	228	231	235	50
132	136	140	143	147	151	154	158	162	165	169	173	176	180	184	187	191	195	198	202	206	209	213	217	220	224	228	232	236	239	51
135	139	142	146	150	154	157	161	165	168	172	176	180	183	187	191	195	198	202	206	210	214	218	221	225	229	233	237	240	244	52
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233	240	246	253	259	266	272	279	285	292	298	305	311	318	324	330	337	343	350	356	363	369	376	382	389	395	402	408	415	421	90
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246	253	260	267	274	280	287	294	301	308	315	321	328	335	342	349	356	363	369	376	383	390	397	404	410	417	424	431	438	445	95
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254	261	268	275	282	289	296	303	310	318	325	332	339	346	353	360	367	374	381	388	395	402	409	416	423	430	437	445	452	459	98
257	264	271	278	285	292	299	307	314	321	328	335	342	349	356	364	371	378	385	392	399	406	413	421	428	435	442	449	456	463	99
259	266	274	281	288	295	302	310	317	324	331	338	346	353	360	367	374	382	389	396	403	410	418	425	432	439	446	454	461	468	100

How To Tie the Weaver's Knot

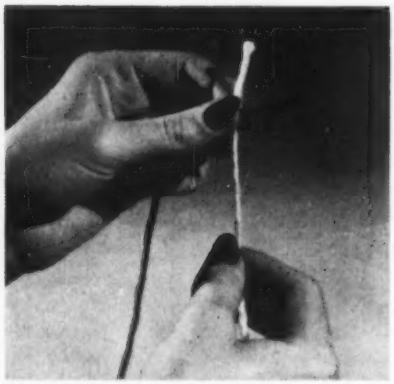


Fig. 1. Cross the two ends. Be sure the end from the left hand is in front of the end from the right hand.

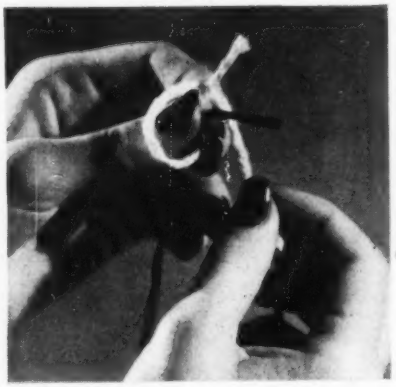


Fig. 2. Swing the yarn in the right hand over the left thumb and in back of the two ends.

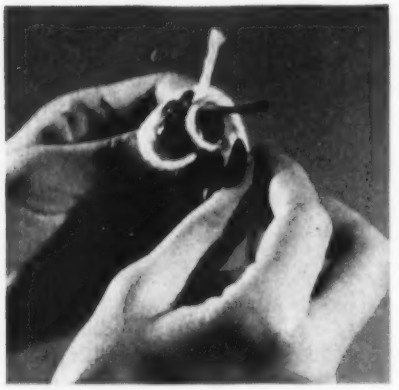


Fig. 3. Now swing the same yarn around only the right hand end.

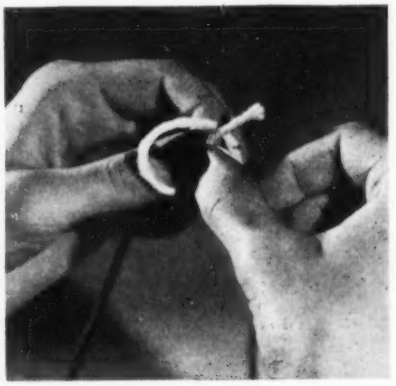


Fig. 4. Push the right-hand end with the right thumb through the loop made by the left thumb.

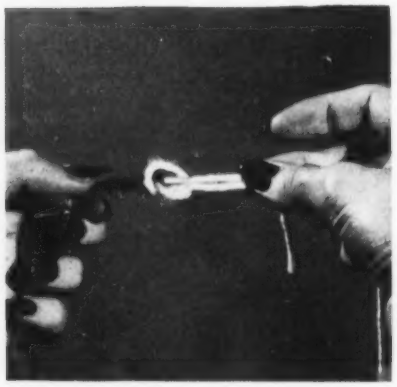


Fig. 5. Now clamp the left thumb on the yarn in the left hand and pull hard with the right hand.

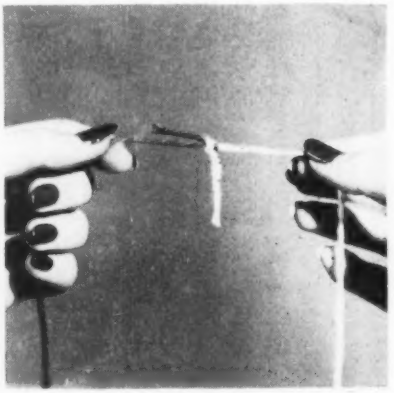


Fig. 6. Completed knot should have short ends on opposite sides of the knot.

How To Tie the Double Weaver's Knot

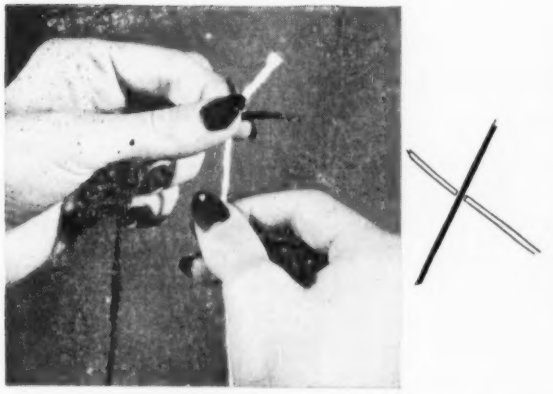


Fig. 1. Cross the two ends. Be sure the end from the left hand is in front of the end from the right hand. (The first two steps are the same ones used in tying the conventional weaver's knot.)

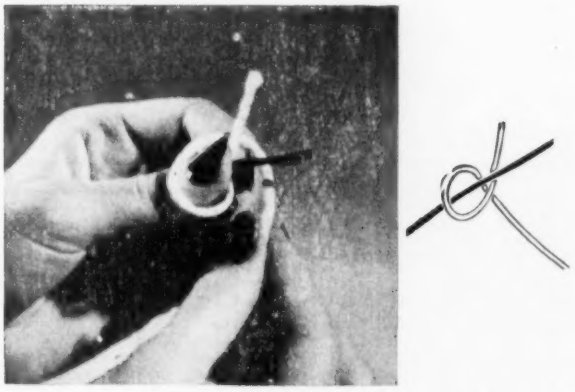


Fig. 2. Swing the yarn in the right hand over the left thumb and back of the two ends.

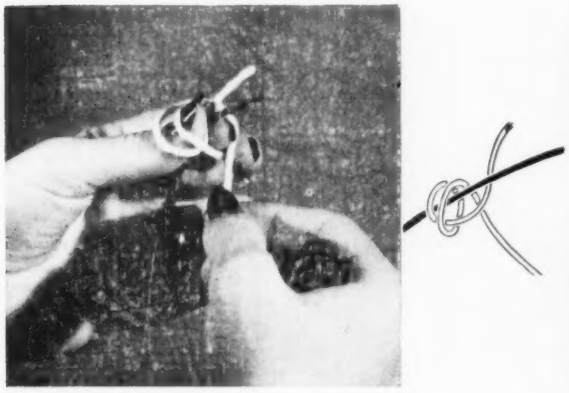


Fig. 3. Swing the yarn in the right hand over the left thumb and back of the two ends a second time, with the second loop to the right of the first loop.

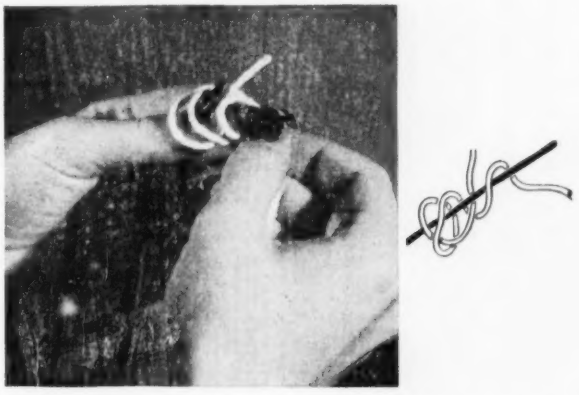


Fig. 4. Swing the yarn in the right hand around the single short end on the right.

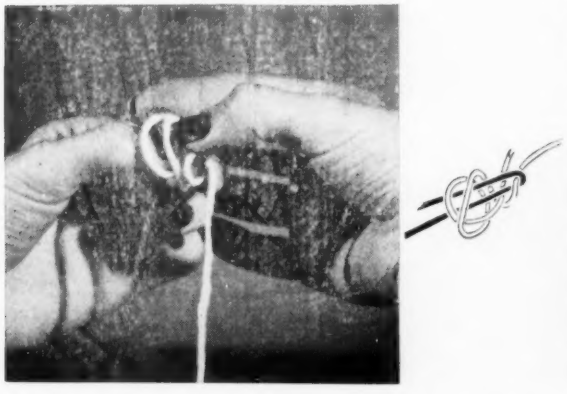


Fig. 5. Push the short end on the right over the last loop that was swung around it and through the two loops on the left that were swung around both ends.

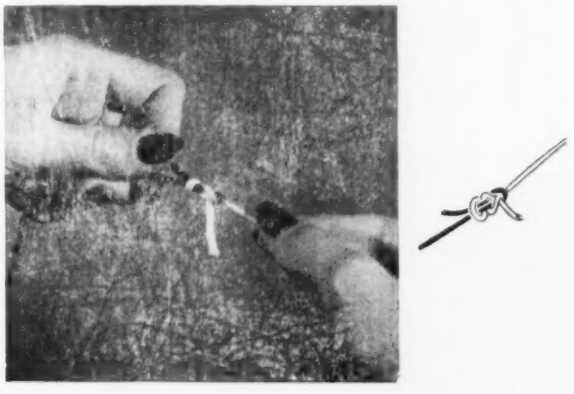


Fig. 6. Clamp the long and short ends now on the left between the left thumb and the forefinger and pull the knot tight.

Yards of Cloth per Loom per Hour

(100% production)

Picks per inch	Picks per minute																					
	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205
20	8.33	8.75	9.17	9.58	10.00	10.42	10.83	11.25	11.67	12.08	12.50	12.92	13.33	13.75	14.17	14.58	15.00	15.42	15.83	16.25	16.67	17.08
22	7.58	7.95	8.33	8.71	9.09	9.47	9.85	10.23	10.61	10.98	11.36	11.74	12.12	12.50	12.88	13.26	13.64	14.02	14.39	14.77	15.15	15.53
24	6.94	7.29	7.64	7.99	8.33	8.68	9.03	9.37	9.72	10.07	10.42	10.76	11.11	11.46	11.81	12.15	12.50	12.85	13.19	13.54	13.89	14.24
26	6.41	6.73	7.05	7.37	7.69	8.01	8.33	8.65	8.97	9.29	9.62	9.94	10.26	10.58	10.90	11.22	11.54	11.86	12.18	12.50	12.82	13.14
28	5.95	6.25	6.55	6.85	7.14	7.44	7.74	8.04	8.33	8.63	8.93	9.23	9.52	9.82	10.12	10.42	10.71	11.01	11.31	11.61	11.90	12.20
30	5.56	5.83	6.11	6.39	6.67	6.94	7.22	7.50	7.78	8.06	8.33	8.61	8.89	9.17	9.44	9.72	10.00	10.28	10.55	10.83	11.11	11.39
32	5.21	5.47	5.73	5.99	6.25	6.51	6.77	7.03	7.29	7.55	7.81	8.07	8.33	8.59	8.85	9.11	9.37	9.64	9.90	10.16	10.42	10.68
34	4.90	5.15	5.39	5.64	5.88	6.13	6.37	6.62	6.86	7.11	7.35	7.60	7.84	8.09	8.33	8.58	8.82	9.07	9.31	9.56	9.80	10.05
36	4.63	4.86	5.09	5.32	5.56	5.79	6.02	6.25	6.48	6.71	6.94	7.18	7.41	7.64	7.87	8.10	8.33	8.56	8.80	9.03	9.26	9.49
38	4.39	4.61	4.82	5.04	5.26	5.48	5.70	5.92	6.14	6.36	6.58	6.80	7.02	7.24	7.46	7.68	7.89	8.11	8.33	8.55	8.77	8.99
40	4.17	4.37	4.58	4.79	5.00	5.21	5.42	5.63	5.83	6.04	6.25	6.46	6.67	6.87	7.08	7.29	7.50	7.71	7.92	8.13	8.33	8.54
42	3.97	4.17	4.37	4.56	4.76	4.96	5.16	5.36	5.55	5.75	5.95	6.15	6.35	6.55	6.75	6.94	7.14	7.34	7.54	7.74	7.94	8.13
44	3.79	3.98	4.17	4.36	4.55	4.73	4.92	5.11	5.30	5.49	5.68	5.87	6.06	6.25	6.44	6.63	6.82	7.01	7.20	7.39	7.58	7.77
46	3.62	3.80	3.99	4.17	4.35	4.53	4.71	4.89	5.07	5.25	5.43	5.62	5.80	5.98	6.16	6.34	6.52	6.70	6.88	7.07	7.25	7.43
48	3.47	3.65	3.82	3.99	4.17	4.34	4.51	4.69	4.86	5.03	5.21	5.38	5.56	5.73	5.90	6.08	6.25	6.42	6.60	6.77	6.94	7.12
50	3.33	3.50	3.67	3.83	4.00	4.17	4.33	4.50	4.67	4.83	5.00	5.17	5.33	5.50	5.67	5.83	6.00	6.17	6.33	6.50	6.67	6.83
52	3.21	3.37	3.53	3.69	3.85	4.01	4.17	4.33	4.49	4.65	4.81	4.97	5.13	5.29	5.45	5.61	5.77	5.93	6.09	6.25	6.41	6.57
54	3.09	3.24	3.40	3.55	3.70	3.86	4.01	4.17	4.32	4.48	4.63	4.78	4.94	5.09	5.25	5.40	5.56	5.71	5.86	6.02	6.17	6.33
56	2.98	3.13	3.27	3.42	3.57	3.72	3.87	4.02	4.17	4.32	4.46	4.61	4.76	4.91	5.06	5.21	5.36	5.51	5.65	5.80	5.95	6.10
58	2.87	3.02	3.16	3.30	3.45	3.59	3.74	3.88	4.02	4.17	4.31	4.45	4.60	4.74	4.88	5.03	5.17	5.32	5.46	5.60	5.75	5.89
60	2.78	2.92	3.06	3.19	3.33	3.47	3.61	3.75	3.89	4.03	4.17	4.31	4.44	4.58	4.72	4.86	5.00	5.14	5.28	5.42	5.56	5.69
62	2.69	2.82	2.96	3.09	3.23	3.36	3.49	3.63	3.76	3.90	4.03	4.17	4.30	4.44	4.57	4.70	4.84	4.97	5.11	5.24	5.38	5.51
64	2.60	2.73	2.86	2.99	3.13	3.26	3.39	3.52	3.65	3.78	3.91	4.04	4.17	4.30	4.43	4.56	4.69	4.82	4.95	5.08	5.21	5.34
66	2.53	2.65	2.78	2.90	3.03	3.16	3.28	3.41	3.54	3.66	3.79	3.91	4.04	4.17	4.29	4.42	4.55	4.67	4.80	4.92	5.05	5.18
68	2.45	2.57	2.70	2.82	2.94	3.06	3.19	3.31	3.43	3.55	3.68	3.80	3.92	4.04	4.17	4.29	4.41	4.53	4.66	4.78	4.90	5.02
70	2.38	2.50	2.62	2.74	2.86	2.98	3.10	3.21	3.33	3.45	3.57	3.69	3.81	3.93	4.05	4.17	4.29	4.40	4.52	4.64	4.76	4.88
72	2.31	2.43	2.55	2.66	2.78	2.89	3.01	3.13	3.24	3.36	3.47	3.59	3.70	3.82	3.94	4.05	4.17	4.28	4.40	4.51	4.63	4.75
74	2.25	2.36	2.48	2.59	2.70	2.82	2.93	3.04	3.15	3.27	3.38	3.49	3.60	3.72	3.83	3.94	4.05	4.17	4.28	4.39	4.50	4.62
76	2.19	2.30	2.41	2.52	2.63	2.74	2.85	2.96	3.07	3.18	3.29	3.40	3.51	3.62	3.73	3.84	3.95	4.06	4.17	4.28	4.39	4.50
78	2.14	2.24	2.35	2.46	2.56	2.67	2.78	2.88	2.99	3.10	3.21	3.31	3.42	3.53	3.63	3.74	3.85	3.95	4.06	4.17	4.27	4.38
80	2.08	2.19	2.29	2.40	2.50	2.60	2.71	2.81	2.92	3.02	3.13	3.23	3.33	3.44	3.54	3.65	3.75	3.85	3.96	4.06	4.17	4.27
82	2.03	2.13	2.24	2.34	2.44	2.54	2.64	2.74	2.85	2.95	3.05	3.15	3.25	3.35	3.46	3.56	3.66	3.76	3.86	3.96	4.07	4.17
84	1.98	2.08	2.18	2.28	2.38	2.48	2.58	2.68	2.78	2.88	2.98	3.08	3.17	3.27	3.37	3.47	3.57	3.66	3.77	3.87	3.97	4.07
86	1.94	2.03	2.13	2.23	2.33	2.42	2.52	2.62	2.71	2.81	2.91	3.00	3.10	3.20	3.29	3.39	3.49	3.58	3.68	3.78	3.88	3.97
88	1.89	1.99	2.08	2.18	2.27	2.37	2.46	2.56	2.65	2.75	2.84	2.94	3.03	3.13	3.22	3.31	3.41	3.50	3.60	3.69	3.79	3.88
90	1.85	1.94	2.04	2.13	2.22	2.31	2.41	2.50	2.59	2.69	2.78	2.87	2.96	3.06	3.15	3.24	3.33	3.43	3.52	3.61	3.70	3.80
92	1.81	1.90	1.99	2.08	2.17	2.26	2.36	2.45	2.54	2.63	2.72	2.81	2.90	2.99	3.08	3.17	3.26	3.35	3.44	3.53	3.62	3.71
94	1.77	1.86	1.95	2.04	2.13	2.22	2.30	2.39	2.48	2.57	2.66	2.75	2.84	2.93	3.01	3.10	3.19	3.28	3.37	3.46	3.55	3.63
96	1.74	1.82	1.91	2.00	2.08	2.17	2.26	2.34	2.43	2.52	2.60	2.69	2.78	2.86	2.95	3.04	3.13	3.21	3.30	3.39	3.47	3.56
98	1.70	1.79	1.87	1.96	2.04	2.13	2.21	2.30	2.38	2.47	2.55	2.64	2.72	2.81	2.89	2.98	3.06	3.15	3.23	3.32	3.40	3.49
100	1.67	1.75	1.83	1.92	2.00	2.08	2.17	2.25	2.33	2.42	2.50	2.58	2.67	2.75	2.83	2.92	3.00	3.08	3.17	3.25	3.33	3.44
102	1.63	1.72	1.80	1.88	1.96	2.04	2.12	2.21	2.29	2.37	2.45	2.53	2.61	2.70	2.78	2.86	2.94	3.02	3.10	3.19	3.27	3.35
104	1.60	1.68	1.76	1.84	1.92	2.00	2.08	2.16	2.24	2.32	2.40	2.48	2.56	2.64	2.72	2.80	2.88	2.96	3.04	3.13	3.21	3.29
106	1.57	1.65	1.73	1.81	1.89	1.97	2.04	2.12	2.20	2.28	2.36	2.44	2.52	2.59	2.67	2.75	2.83	2.91	2.99	3.07	3.14	3.22
108	1.54	1.62	1.70	1.77	1.85	1.93	2.01	2.08	2.16	2.24	2.31	2.39	2.47	2.55	2.62	2.70	2.78	2.85	2.93	3.01	3.09	3.16
110	1.52	1.59	1.67	1.74	1.82	1.89	1.97	2.05	2.12	2.20	2.27	2.35	2.42	2.50	2.58	2.65	2.73	2.80	2.88	2.95	3.03	3.11
112	1.49	1.56	1.64	1.71	1.79	1.86	1.93	2.01	2.08	2.16	2.23	2.31	2.38	2.46	2.53	2.60	2.68	2.75	2.83	2.90	2.98	3.05
114	1.46	1.54	1.61	1.68	1.75	1.83	1.90	1.97	2.05	2.12	2.19	2.27	2.34	2.41	2.49	2.56	2.63	2.70	2.78	2.85	2.92	3.00
116	1.44	1.51	1.58	1.65	1.72	1.80	1.87	1.94	2.01	2.08	2.16	2.23	2.30	2.37	2.44	2.51	2.59	2.66	2.73	2.80	2.87	2.95
118	1.41	1.48	1.55	1.62	1.69	1.77	1.84	1.91	1.98	2.05	2.12	2.19	2.26	2.33	2.40	2.47	2.54	2.61	2.68	2.75	2.82	2.90
120	1.39	1.46	1.53	1.60	1.67	1.74	1.81	1.87	1.94	2.01	2.08	2.15	2.22	2.29	2.36	2.43	2.50	2.57	2.64	2.71	2.78	2.85
122	1.37	1.43	1.50	1.57	1.64	1.71	1.78	1.84	1.91	1.98	2.04	2.12	2.19	2.25	2.32	2.39	2.46	2.53	2.60	2.66	2.73	2.80
124	1.34	1.41	1.48	1.55	1.61	1.68	1.75	1.81	1.88	1.95	2.01	2.08	2.15	2.22	2.28	2.35	2.42	2.49	2.55	2.62	2.69	2.76
126	1.32	1.39	1.46	1.52	1.59	1.65	1.72	1.79	1.85	1.92	1.98	2.05	2.12	2.18	2.25	2.31	2.38	2.45	2.51	2.58	2.65	2.71
128	1.30	1.37	1.43	1.50	1.56	1.63	1.69	1.76	1.82	1.89	1.95	2.02	2.08	2.15	2.21	2.28	2.34	2.41	2.47	2.54	2.60	2.67
130	1.28	1.35	1.41	1.47	1.54	1.60	1.67	1.73	1.79	1.86	1.92	1.99	2.05	2.12	2.18	2.24	2.31	2.37	2.44	2.50	2.56	2.63
134	1.24	1.31	1.37	1.43	1.49	1.55	1.62	1.68	1.74	1.80	1.87	1.93	1.99	2.05	2.11	2.18	2.24	2.30	2.36	2.43	2.49	2.55
136	1.23	1.29	1.35	1.41	1.47	1.53	1.59	1.65	1.72	1.78	1.84	1.90	1.96	2.02	2.08	2.14	2.21	2.27	2.33	2.39	2.45	2.51
140	1.19	1.25	1.31	1.37	1.43	1.49	1.55	1.61	1.67	1.73	1.79	1.85	1.90	1.96	2.02	2.08	2.14	2.20	2.26	2.32	2.38	2.44
144	1.16	1.22	1.27	1.33	1.39	1.45	1.50	1.56	1.62	1.68	1.74	1.79	1.85	1.91	1.97	2.03	2.08	2.14	2.20	2.26	2.31	2.37
146	1.14	1.20	1.26	1.31	1.37	1.43	1.48	1.54	1.60	1.66	1.71	1.77	1.83	1.88	1.94	2.00	2.05	2.11	2.17	2.23	2.28	2.34
150	1.11	1.17	1.22	1.28	1.33	1.39	1.44	1.50	1.56	1.61	1.67	1.72	1.78	1.83	1.89	1.94	2.00	2.06	2.11	2.17	2.22	2.28
154	1.08	1.14	1.19	1.24	1.30	1.35	1.41	1.46	1.52	1.57	1.62	1.68	1.73	1.79	1.84	1.89	1.95	2.00	2.06	2.11	2.16	2.22
156	1.07	1.12	1.18	1.23	1.28	1.34	1.39	1.44	1.50	1.55	1.60	1.66	1.71	1.76	1.82	1.87	1.92	1.98	2.03	2.08	2.14	2.19
160	1.04	1.09	1.15	1.20	1.25	1.30	1.35	1.41	1.46	1.51	1.56	1.61	1.67	1.72	1.77	1.82	1.87	1.93	1.98	2.03	2.08	2.14
164	1.02	1.07	1.12	1.17	1.22	1.27	1.32	1.37	1.42	1.47	1.52	1.58	1.63	1.68	1.73	1.78	1.83	1.88	1.93	1.98	2.03	2.08
166	1.00	1.05	1.10	1.15	1.20	1.26	1.31	1.35	1.41	1.46	1.51	1.56	1.61	1.66	1.71	1.76	1.81	1.86	1.91	1.96	2.01	2.06
170	.98	1.03	1.08	1.13	1.18	1.23	1.27	1.32	1.37	1.42	1.47	1.52	1.57	1.62	1.67	1.72	1.76	1.81	1.86	1.91	1.96	2.01
174	.96	1.01	1.05	1.10	1.15	1.20	1.25	1.29	1.34	1.39	1.44	1.48	1.54	1.58	1.63	1.68	1.72	1.77	1.82	1.87	1.92	1.96
176	.95	.99	1.04	1.09	1.14	1.18	1.23	1.28	1.33	1.37	1.42	1.47	1.52	1.56	1.61	1.66	1.70	1.75	1.80	1.85	1.89	1.94
180	.93	.97	1.02	1.06	1.11	1.16	1.20	1.25	1.30	1.34	1.39	1.44	1.48	1.53	1.57	1.62	1.67	1.71	1.76	1.81	1.85	1.90

Ring-Frame Production

Simplified Formula Based on Revolutions of Delivery Roll

Production in lbs. for 10 hrs. continuous operation =

$$\frac{\text{rpm. of delivery roll}}{\text{yarn number}} \times \text{constant}$$

Dia. of delivery roll (ins.)	Cotton-system constant	Woolen-run-system constant	Worsted-system constant	Typp-system constant
1	.0623	.0328	.0935	.0524
1 1/8	.0701	.0369	.1052	.0590
1 1/4	.0779	.0410	.1169	.0655
1 1/2	.0935	.0492	.1403	.0786
2	.1246	.0656	.1870	.1048
4	.....	.1312	.3740	.2096

Simplified Formulas (10 hrs. production) Based on Spindle Speed, Twist, and Yarn Number

Cotton system: $\frac{\text{spindle speed}}{\text{twist} \times 50.4 \times \text{number}}$

Woolen system: $\frac{\text{spindle speed}}{\text{twist} \times 96 \times \text{number}}$

Worsted system: $\frac{\text{spindle speed}}{\text{twist} \times 33.6 \times \text{number}}$

Typp system: $\frac{\text{spindle speed}}{\text{twist} \times 60 \times \text{number}}$

Weight of Traveler

The following formula serves as a starting point for figuring the proper weight of the new traveler when you change from one yarn number to another. Such factors as quality of stock, diameter of ring, etc. have to be taken into consideration; but use of the formula will save time.

FORMULA:

$$\frac{\text{number of yarn being spun} \times \text{weight in grains of 10 of travelers being used}}{\text{number of yarn to be spun}} = \text{weight in grains of 10 of travelers to be used}$$

EXAMPLE: If you change from 30s to 20s yarn:

$$\frac{\text{30s (yarn being spun)} \times \text{6 grs. (weight in grains of 10 of travelers being used—6/10)}}{\text{20s (yarn to be spun)}} = \text{9 grs (for 10 travelers), or a 1/0 traveler.}$$

Recommended Travelers

(Whitin ring-spinning frames with separators)

Warp Yarn				Filling Yarn			
Yarn No.	Spindle rpm.	Ring dia. (ins.)	Traveler No.	Yarn No.	Spindle rpm.	Ring dia. (ins.)	Traveler No.
4	4,950	2	14	4	4,000	1 1/2	16
6	5,900	2	12	6	4,800	1 1/2	13
8	6,700	2	9	8	5,450	1 1/2	10
10	7,250	2	8	10	5,950	1 1/2	8
11	7,500	2	7	11	6,150	1 1/2	7
12	7,750	2	6	12	6,350	1 1/2	6
13	7,950	2	5	13	6,500	1 1/2	5
14	8,100	2	5	14	6,700	1 1/2	4
15	8,300	2	4	15	6,850	1 1/2	3
16	8,450	2	3	16	6,950	1 1/2	2
17	8,600	2	2	17	7,100	1 1/2	1
18	8,750	2	1	18	7,200	1 1/2	1-0
19	8,850	2	1-0	19	7,300	1 1/2	2-0
20	8,900	2	1 1/2-0	20	7,400	1 1/2	4-0
21	9,050	2	2-0	21	7,500	1 1/2	4-0
22	9,100	2	3-0	22	7,600	1 1/2	5-0
23	9,150	2	4-0	23	7,700	1 1/2	5-0
24	9,200	2	5-0	24	7,800	1 1/2	6-0
28	9,500	1 3/4	6-0	28	7,900	1 3/8	7-0
32	9,500	1 3/4	7-0	32	7,900	1 3/8	9-0
34	9,600	1 3/4	9-0	34	7,900	1 3/8	11-0
36	9,700	1 3/4	11-0	36	7,900	1 3/8	13-0
38	9,800	1 3/4	13-0	38	7,900	1 3/8	14-0
40	9,700	1 5/8	14-0	40	7,900	1 1/4	15-0
45	9,700	1 1/2	15-0	45	7,900	1 1/4	16-0
50	9,700	1 1/2	16-0	50	7,900	1 1/4	17-0
55	9,600	1 1/2	16-0	55	7,900	1 1/4	17-0
60	9,600	1 1/2	17-0	60	7,900	1 1/4	18-0
65	9,600	1 1/2	17-0	65	7,800	1 1/4	18-0
70	9,500	1 1/2	18-0	70	7,800	1 1/4	19-0
75	9,500	1 1/2	18-0	75	7,800	1 1/4	19-0
80	9,300	1 1/2	19-0	80	7,700	1 1/4	20-0
85	9,100	1 1/2	19-0	85	7,600	1 1/4	20-0
90	9,100	1 3/8	20-0	90	7,400	1 1/4	21-0
95	9,000	1 3/8	21-0	95	7,400	1 1/4	22-0
100	8,700	1 3/8	22-0	100	7,200	1 1/4	23-0
110	8,500	1 3/8	23-0	110	6,900	1 1/4	24-0

NOTE: *Sizes of travelers will vary from the above table according to variations in speed, quality of cotton, etc.; but the table may serve as a basis for traveler selection.*

The higher the speed, the lighter the traveler, and vice versa, varying in proportion of one or two grades of travelers to each 1,000 revolutions of the spindle. Without separators, a few grades heavier traveler would be required.

The table is the result of tests conducted by O. L. Owen, mill engineer, assisted by D. S. Goodspeed.

Traveler Numbers and Weights

(Round- or square-pointed travelers)

Traveler No.	Weight (grains per 10 travelers)	Traveler No.	Weight (grains per 10 travelers)	Traveler No.	Weight (grains per 10 travelers)	Traveler No.	Weight (grains per 10 travelers)
28-0	1/4	3	12	36	84	69	150
27½-0	3/8	4	13	37	86	70	152
27-0	1/2	5	14	38	88	71	154
26-0	3/4	6	16	39	90	72	156
25-0	1	7	18	40	92	73	158
24-0	1 1/4	8	20	41	94	74	160
23-0	1 1/2	9	23	42	96	75	162
22-0	1 3/4	10	26	43	98	76	164
21-0	2	11	30	44	100	77	166
20-0	2 1/4	12	33	45	102	78	168
19-0	2 1/2	13	36	46	104	79	170
18-0	2 3/4	14	39	47	106	80	172
17-0	3	15	42	48	108	81	174
16-0	3 1/4	16	44	49	110	82	176
15-0	3 1/2	17	46	50	112	83	178
14-0	3 3/4	18	48	51	114	84	180
13-0	4	19	50	52	116	85	182
12-0	4 1/4	20	52	53	118	86	184
11-0	4 1/2	21	54	54	120	87	186
10-0	4 3/4	22	56	55	122	88	188
9-0	5	23	58	56	124	89	190
8-0	5 1/4	24	60	57	126	90	192
7-0	5 1/2	25	62	58	128	91	194
6½-0	5 3/4	23	64	59	130	92	196
6-0	6	27	66	60	132	93	198
5-0	6 1/2	28	68	61	134	94	200
4-0	7	29	70	62	136	95	202
3-0	7 1/2	30	72	63	138	96	204
2-0	8	31	74	64	140	97	206
1½-0	8 1/2	32	76	65	142	98	208
1-0	9	33	78	66	144	99	210
1	10	34	80	67	146	100	212
2	11	35	82	68	148		

Courtesy Victor Ring Traveler Co.

Roving-Twist Table

This table gives roving twists for various staple lengths and sizes of roving. Hank roving is in the left hand column and twist, in turns per inch, under the staple lengths.

Hank roving	Staple lengths in millimeters Adapted to "Egyptian C.C.C." lengths				Staple lengths in inches U. S. Government Standards							
	47–50	44–46	40–43	37–39	1 3/8	1 5/16	1¼	1 3/16	1 1/8	1 1/16	1	7/8
0.50	0.50	0.52	0.55	0.57	0.60	0.62	0.65	0.67	0.70	0.72	0.75	0.77
0.55	0.53	0.55	0.58	0.61	0.64	0.66	0.69	0.71	0.74	0.76	0.79	0.81
0.60	0.56	0.59	0.62	0.64	0.67	0.70	0.73	0.75	0.78	0.81	0.84	0.86
0.65	0.59	0.62	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.85	0.88	0.91
0.70	0.62	0.65	0.68	0.71	0.74	0.76	0.81	0.84	0.87	0.90	0.93	0.96
0.75	0.65	0.68	0.71	0.74	0.78	0.81	0.84	0.87	0.91	0.94	0.97	1.00
0.80	0.68	0.71	0.75	0.78	0.82	0.85	0.88	0.91	0.95	0.98	1.02	1.05
0.85	0.70	0.73	0.77	0.80	0.84	0.87	0.91	0.94	0.98	1.01	1.05	1.09
0.90	0.72	0.75	0.79	0.82	0.86	0.90	0.94	0.97	1.01	1.04	1.08	1.12
0.95	0.74	0.77	0.81	0.85	0.89	0.92	0.96	1.00	1.04	1.07	1.11	1.14
1.00	0.76	0.80	0.84	0.87	0.91	0.95	0.99	1.02	1.06	1.10	1.14	1.17
1.05	0.78	0.82	0.86	0.90	0.94	0.97	1.01	1.06	1.09	1.13	1.17	1.20
1.10	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.20	1.23
1.15	0.82	0.86	0.90	0.94	0.98	1.02	1.07	1.11	1.15	1.19	1.23	1.26
1.20	0.84	0.88	0.92	0.96	1.01	1.05	1.09	1.13	1.18	1.22	1.26	1.29
1.25	0.86	0.90	0.95	0.99	1.03	1.07	1.12	1.16	1.20	1.24	1.29	1.33
1.30	0.88	0.92	0.97	1.01	1.06	1.10	1.14	1.18	1.23	1.27	1.32	1.36
1.35	0.90	0.94	0.99	1.03	1.08	1.12	1.17	1.21	1.26	1.30	1.35	1.39
1.40	0.92	0.96	1.01	1.05	1.10	1.15	1.20	1.24	1.29	1.33	1.38	1.42
1.45	0.94	0.98	1.03	1.08	1.13	1.17	1.22	1.27	1.32	1.36	1.41	1.45
1.50	0.96	1.01	1.06	1.10	1.15	1.20	1.25	1.29	1.34	1.39	1.44	1.48
1.55	0.98	1.03	1.08	1.13	1.18	1.22	1.27	1.32	1.37	1.42	1.47	1.51
1.60	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55
1.65	1.02	1.07	1.12	1.17	1.22	1.27	1.33	1.38	1.43	1.48	1.53	1.58
1.70	1.04	1.09	1.14	1.19	1.25	1.29	1.35	1.40	1.46	1.51	1.56	1.61
1.75	1.06	1.11	1.17	1.22	1.27	1.32	1.38	1.43	1.48	1.53	1.59	1.64
1.80	1.08	1.13	1.19	1.24	1.30	1.35	1.40	1.45	1.51	1.56	1.62	1.67
1.85	1.10	1.15	1.21	1.26	1.32	1.37	1.43	1.48	1.54	1.59	1.65	1.70
1.90	1.12	1.17	1.23	1.28	1.34	1.40	1.46	1.51	1.57	1.62	1.68	1.73
1.95	1.14	1.20	1.25	1.31	1.37	1.42	1.48	1.54	1.60	1.65	1.71	1.76
2.00	1.16	1.22	1.28	1.33	1.39	1.45	1.51	1.56	1.62	1.68	1.74	1.79
2.25	1.24	1.30	1.36	1.42	1.49	1.55	1.61	1.67	1.74	1.80	1.86	1.92
2.50	1.31	1.37	1.44	1.50	1.57	1.64	1.70	1.76	1.83	1.89	1.96	2.02
2.75	1.38	1.45	1.52	1.59	1.66	1.72	1.79	1.86	1.93	2.00	2.07	2.14
3.00	1.45	1.52	1.59	1.66	1.74	1.81	1.88	1.95	2.03	2.10	2.17	2.24
3.25	1.52	1.59	1.67	1.74	1.82	1.90	1.98	2.05	2.13	2.20	2.28	2.36
3.50	1.59	1.67	1.75	1.83	1.91	1.99	2.07	2.15	2.23	2.30	2.38	2.46
3.75	1.66	1.74	1.83	1.91	1.99	2.07	2.16	2.24	2.32	2.40	2.49	2.57
4.00	1.72	1.80	1.89	1.97	2.06	2.15	2.24	2.32	2.41	2.49	2.58	2.67
4.25	1.78	1.87	1.96	2.05	2.14	2.22	2.31	2.40	2.49	2.58	2.67	2.76
4.50	1.84	1.93	2.02	2.11	2.21	2.30	2.39	2.48	2.58	2.67	2.76	2.85
4.75	1.90	1.99	2.09	2.18	2.28	2.37	2.47	2.56	2.66	2.75	2.85	2.94
5.00	1.96	2.06	2.16	2.25	2.35	2.45	2.55	2.64	2.74	2.84	2.94	3.03
5.25	2.02	2.12	2.22	2.32	2.42	2.52	2.63	2.73	2.83	2.93	3.03	3.12
5.50	2.07	2.17	2.28	2.38	2.48	2.58	2.69	2.79	2.90	3.00	3.10	3.20
5.75	2.12	2.22	2.33	2.44	2.54	2.65	2.76	2.86	2.97	3.07	3.18	3.28
6.00	2.17	2.28	2.39	2.49	2.60	2.71	2.82	2.93	3.04	3.14	3.25	3.36
6.25	2.22	2.33	2.44	2.55	2.66	2.77	2.89	3.00	3.11	3.22	3.33	3.44
6.50	2.26	2.37	2.49	2.60	2.71	2.82	2.94	3.05	3.16	3.27	3.39	3.51
6.75	2.30	2.41	2.53	2.64	2.76	2.87	2.99	3.10	3.22	3.33	3.45	3.56
7.00	2.34	2.45	2.57	2.69	2.81	2.92	3.04	3.16	3.28	3.39	3.51	3.62
7.50	2.43	2.55	2.67	2.79	2.91	3.03	3.16	3.28	3.40	3.52	3.64	3.76
8.00	2.51	2.63	2.76	2.88	3.01	3.13	3.26	3.38	3.51	3.63	3.76	3.88
8.50	2.59	2.72	2.85	2.98	3.11	3.24	3.37	3.50	3.63	3.75	3.88	4.00
9.00	2.67	2.80	2.94	3.07	3.20	3.33	3.47	3.60	3.74	3.87	4.00	4.13
9.50	2.75	2.88	3.02	3.16	3.30	3.43	3.57	3.71	3.85	3.98	4.12	4.25
10.00	2.83	2.97	3.11	3.25	3.40	3.54	3.68	3.82	3.96	4.10	4.24	4.38
10.50	2.91	3.05	3.20	3.34	3.49	3.63	3.78	3.92	4.07	4.21	4.35	4.50
11.00	2.99	3.14	3.29	3.44	3.59	3.74	3.89	4.04	4.19	4.33	4.48	4.62
11.50	3.06	3.21	3.37	3.52	3.67	3.82	3.98	4.13	4.28	4.43	4.59	4.74
12.00	3.13	3.28	3.44	3.60	3.76	3.91	4.07	4.22	4.38	4.53	4.69	4.84
12.50	3.20	3.36	3.52	3.68	3.84	4.00	4.16	4.32	4.48	4.64	4.80	4.95
13.00	3.27	3.43	3.60	3.76	3.92	4.08	4.25	4.41	4.58	4.74	4.90	5.06
13.50	3.34	3.50	3.67	3.84	4.01	4.17	4.34	4.51	4.68	4.84	5.01	5.17
14.00	3.41	3.58	3.75	3.92	4.09	4.26	4.43	4.60	4.77	4.94	5.11	5.28
14.50	3.47	3.64	3.82	3.99	4.16	4.33	4.51	4.68	4.86	5.03	5.20	5.37
15.00	3.53	3.70	3.88	4.06	4.24	4.41	4.59	4.76	4.94	5.11	5.29	5.46
15.50	3.59	3.77	3.95	4.13	4.31	4.48	4.66	4.84	5.03	5.20	5.38	
16.00	3.65	3.83	4.01	4.19	4.38	4.56	4.74	4.92	5.11	5.29	5.47	
16.50	3.71	3.89	4.08	4.26	4.44	4.63	4.82	5.00	5.19	5.37		
17.00	3.77	3.96	4.15	4.33	4.52	4.71	4.90	5.09	5.28	5.47		
17.50	3.82	4.01	4.20	4.39	4.58	4.77	4.97	5.16	5.35			
18.00	3.87	4.06	4.26	4.45	4.64	4.83	5.03	5.22	5.42			
18.50	3.92	4.11	4.31	4.50	4.70	4.90	5.10	5.29	5.49			
19.00	3.97	4.17	4.37	4.56	4.76	4.96	5.16	5.36				
19.50	4.02	4.22	4.42	4.62	4.82	5.02	5.23	5.43				
20.00	4.07	4.27	4.48	4.68	4.88	5.08	5.29	5.49				

Roving-Twist Nomograph

Based on fineness as well as hank roving and staple length, this nomograph was derived from the following formula:

$$Y = \frac{.50\ (F)^{1/2}\ (X)^{2/3}}{L}$$

Where Y = tpi.

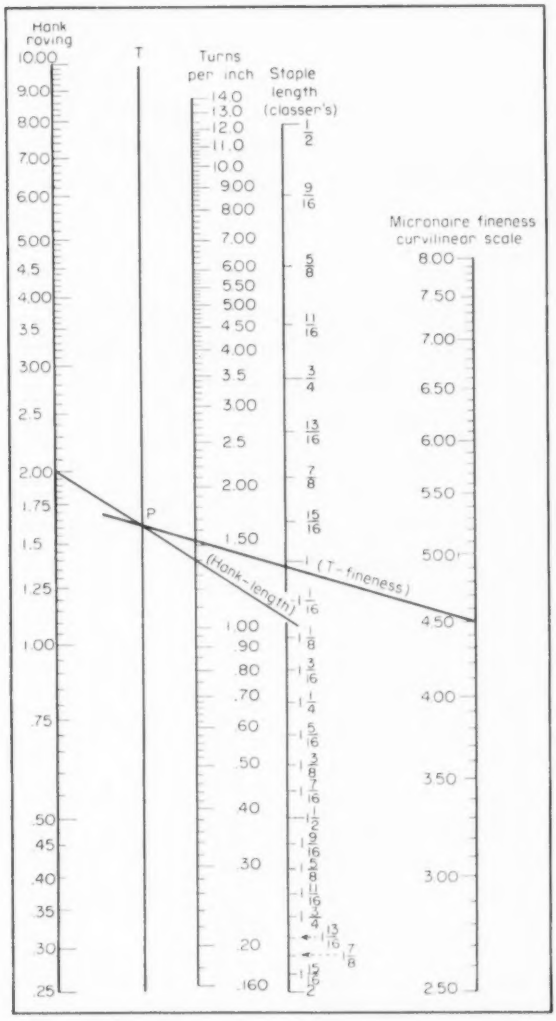
X = hank roving

F = Micronaire fineness (curvilinear scale)

L = classer's staple length

These data are for carded cotton yarns. For combed cottons, a new constant can be determined or twist can be calculated on a proportional basis.

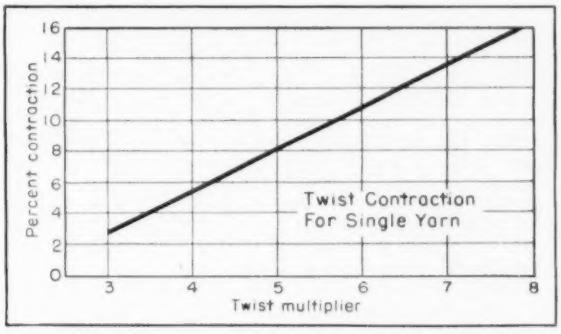
This work was done by James R. Corley, Southern Regional Research Laboratory.



TO GET ROVING TWIST, join hank roving with staple length and mark the spot P where that line intersects the reference line T. Then connect P with the fineness and read turns per inch directly. The example assumes 2.00-hk. roving, 1 1/32-in. staple length, and fineness of 4.5, to require 1.53 tpi.

Effect of Twist on Singles-Cotton-Yarn Contraction

This chart shows the contraction of singles yarns due to spinning twist. The vertical scale shows the percent contraction. The horizontal scale shows the twist multipliers, used in the usual way: twists per inch=multiplier$\times\sqrt{\text{counts}}$.

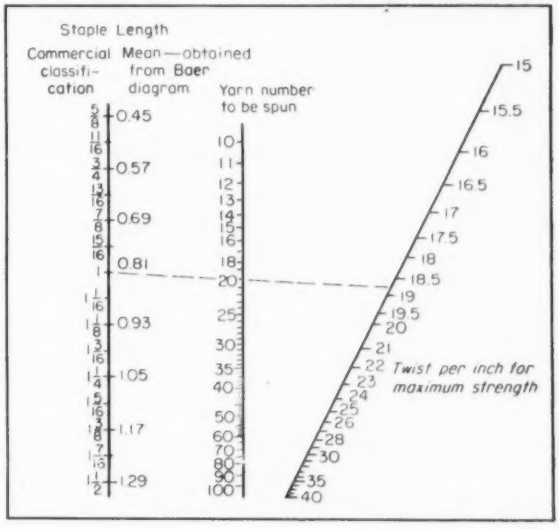


Yarn Numbers and Staple Lengths

Staple (ins.)	Carded yarn	
	Warp	Filling
1/2 to 5/8	Up to 10s	Up to 10s
5/8 to 3/4	10s to 14s	10s to 20s
3/4 to 7/8	14s to 20s	20s to 30s
7/8 to 1	20s to 30s	30s to 36s
1 to 1 1/8	30s to 36s	36s to 45s
1 1/8 to 1 1/4	36s to 50s	45s to 60s
1 1/4 to 1 3/8	50s to 70s	60s to 80s
	Combed yarn	
	Warp	Filling
1 to 1 1/8	Up to 30s	Up to 40s
1 1/8 to 1 1/4	30s to 60s	40s to 70s
1 1/4 to 1 3/8	60s to 70s	70s to 100s

Twists for Yarns of Maximum Strength

Chart is based on tests conducted by Carl D. Brandt and described in TEXTILE WORLD.



Effect of Twist on Ply-Cotton-Yarn Contraction

This chart shows the effect of twist on contraction of two-ply yarns twisted in the opposite direction to that used in spinning. It is only an indication of what happens in ply twisting and is not a complete answer to questions on this subject. Tests by Carl D. Brandt, reported in TEXTILE WORLD, resulted in charts in agreement with this one.

The vertical scale shows percent elongation and contraction. Zero percent is the original length of the single yarns.

The horizontal scale shows ply twists per inch.

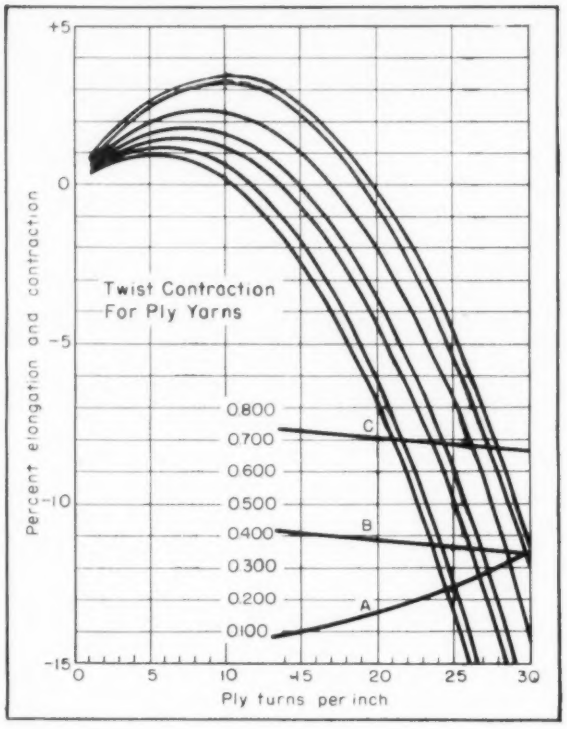
For the upper part of the chart, seven different twists of single 13s were used. The lowest twist gave the lowest curve. Each increase in twist raised the curve slightly. Note that elongation increased with more single twist, but from the point where each passes its crest each curve is practically like the others. It would seem that, once the effect of the single twist is overcome, the contractions are alike. The seven single yarns used in this case were twists 13.30, 16.60, 19.25, 20.40, 25.00, 27.70, and 29.80.

For the lines at the bottom of the chart, the horizontal scale represents the single twists per inch.

Curve A shows the maximum elongation for the single twists, the vertical scale in the center of the chart representing in this case the maximum elongation in hundredths of an inch for a 10-in. length.

Curve B shows the relation of the ply twist to the single twist at the point of maximum elongation.

Curve C shows the relation of the ply twist to the single twist at the point where the ply yarn was the same length as the original singles, or where contraction equaled elongation.



Spinning-Frame Scouring Schedule

The following schedule for scouring spinning frames is recommended by Victor Ring Traveler Co. as the result of observations in a number of average mills. Some modifications in the schedule may be necessary in individual mills, depending on the type and staple of cotton, quality of yarn, and thoroughness of daily cleaning of frames by spinners and cleaners

	Scour every
On coarse soft-twisted filling	4 months
On ordinary twisted yarn up to 30s	6 months
On yarns from 30s to 60s	9 months
On 60s and finer	12 months

Gallons of Cooked Size

Dia. of kettle (in inches)	Gals. size per inch	Dia. of kettle (in inches)	Gals. size per inch
24	1.958	44	6.582
26	2.298	46	7.194
28	2.665	48	7.833
30	3.060	50	8.500
32	3.481	52	9.193
34	3.930	54	9.914
36	4.406	56	10.662
38	4.909	58	11.437
40	5.440	60	12.240
42	5.997		

Rule: dia. of size kettle ^{2} x 0.0034 = gals. size per inch

Example, 42-in. kettle: 42x42x0.0034 = 5.997 gals. per in.

Courtesy E. F. Houghton & Co.

Spinning Twist-Contraction Table for Determining Draft Change Gears

This twist-contraction table helps in determining the change gear needed for a desired yarn number. Actual draft is determined by dividing the desired yarn number (multiplied by two if double roving is used) by the hank of roving in the creel. Percentage of contraction is read directly from the table for the desired twist multiplier. Actual draft is multiplied by one plus twist contraction. The draft constant, divided by the gear draft secured in this way, gives the gear needed for the desired yarn number. Actual yarn number and actual hank roving should be used.

Twist multiplier	% contraction	Twist multiplier	% contraction
3.00	3.10	4.05	5.85
3.05	3.25	4.10	6.00
3.10	3.40	4.15	6.15
3.15	3.53	4.20	6.30
3.20	3.65	4.25	6.43
3.25	3.78	4.30	6.55
3.30	3.90	4.35	6.68
3.35	4.03	4.40	6.80
3.40	4.15	4.45	6.93
3.45	4.28	4.50	7.05
3.50	4.40	4.55	7.20
3.55	4.55	4.60	7.35
3.60	4.70	4.65	7.48
3.65	4.83	4.70	7.60
3.70	4.95	4.75	7.73
3.75	5.08	4.80	7.85
3.80	5.20	4.85	8.00
3.85	5.35	4.90	8.15
3.90	5.50	4.95	8.28
3.95	5.60	5.00	8.40
4.00	5.70		

Cotton-Warp Sizing

With all due qualifications for the differences in opinion on size mixing, class of goods, climatic and atmospheric conditions, Ghent R. Robertshaw, writing in TEXTILE WORLD, offered size mixings for various numbers of yarn. The table gives the approximate weights of corn starch and softener to each 100 gals. of water for sizing combed yarns from 10s to 100s.

Yarn number	Light sley and pick		Medium sley and pick		Heavy sley and pick	
	Starch (lbs.)	Softener (lbs.)	Starch (lbs.)	Softener (lbs.)	Starch (lbs.)	Softener (lbs.)
10s to 25s	40	5	45	6	50	6
25s to 30s	30	4	35	5	40	5
30s to 40s	35	4	40	5	50	6
40s to 60s	45	5	50	5	65	7
60s to 80s	50	6	65	7	80	10
80s to 100s	65	7	80	10	90	12

Card Doffer Speeds

This formula for determining the correct doffer speed in carding cotton of various staple lengths was developed by James Dugelby and presented in TEXTILE WORLD.

(Diameter of cylinder in inches x 0.036 x speed of cylinder in rpm.) ÷ (diameter of doffer in inches x staple length) = speed of doffer in rpm.

The following table shows cylinder speeds recommended by the machinery manufacturers and the corresponding doffer speeds calculated by the formula given above:

Suitable Speeds for Cylinder and Doffer (Rpm.)				
Length of staple (ins.)	50-in. cylinder	Doffer		
		24-in.	26-in.	27-in.
13/16	180	16.41	15.18	14.64
7/8	177	14.98	13.86	13.36
15/16	174	13.75	12.72	12.26
1	171	12.67	11.72	11.30
1 1/16	168	11.71	10.84	10.45
1 1/8	165	10.86	10.05	9.69
1 3/16	163	10.17	9.41	9.07
1 1/4	161	9.54	8.83	8.51
1 5/16	159	8.97	8.30	8.00
1 3/8	158	8.51	7.87	7.59
1 7/16	157	8.09	7.48	7.22
1 1/2	156	7.70	7.13	6.87

Warp-Sizing Formulas For Standard Cotton Fabrics

Fabric	Size formula				
	Water (gals.)	Starch (lbs.)	Softener (lbs.)	Other ingredients (lbs.)	Finished size (gals.)
Denims	170	200	12	--	220
Outing flannel	100	90	7	--	135
Ticking	200	250	10	4 (wax)	250
Surgical gauze	115	80	--	8 (fats)	150
Fine gauze	140	105	--	10 (fats)	175
Cheese cloth	115	140	10½	--	140
Osnaburg	76	115	5	3(aluminum sulfate)	105
Bag goods	75	115	9	--	120
Heavy duck	95	125	9	--	150
Terry cloth					
Bottom warp	130	100	10	--	170
Top warp	90	28	2	--	120
Shade cloth	115	100	--	8 (fats)	140
Fine goods	85	100	5	--	120
Chambray	153	205	16	--	207
Sheetings	100	140	8	--	140
Gingham	100	100	6	2 (wax)	130
Print cloth and broadcloth	100	140	11	--	140
Suede cloth	180	325	16	4(stabilizer)	285
Fancy shirting	90	120	6	3 (wax) 1 (Aktivin)	135

Courtesy E. F. Houghton & Co.

Correlating Ring and Bobbin Size

This table, showing practical ranges of bobbin diameters for different sizes of rings, is reprinted from an article by A. K. Landau, Saco-Lowell Shops, which appeared in TEXTILE WORLD.

Size of ring (ins.)	Minimum bobbin dia. 21°	Conservative bobbin dia. 23°	Bobbin dia. for easy traveler pull 27°	Common practice
	Col. 1	Col. 2*	Col. 3	Col. 4
1 1/8	.403	.440	.511	.500
1 1/4	.448	.488	.567	.563
1 3/8	.493	.537	.624	.625
1 1/2	.537	.586	.681	.625
1 5/8	.582	.635	.737	.750
1 3/4	.627	.684	.794	.750
1 7/8	.672	.732	.851	.813
2	.717	.781	.908	.875
2 1/8	.762	.830	.965	.938
2 1/4	.806	.879	1.021	1.000
2 3/8	.851	.927	1.078	1.000
2 1/2	.896	.977	1.135	1.062
2 3/4	.986	1.074	1.248	1.125
3	1.075	1.172	1.362	1.187

* Recommended for general use.

Effect of Cooking on Viscosity of Commercial Starches

Kind of starch	Parts of water	Viscosity in centipoises after cooking									After standing 24 hrs. in cold	
		3 mins.	10 mins.	15 mins.	20 mins.	25 mins.	35 mins.	45 mins.	55 mins.	75 mins.	Consistency	Clarity
Corn (pearl)	12.5 to 1	708	747	.....	....	890	635	482	340	214	Very firm jelly	Cloudy
Wheat	11.5 to 1	375	375	.....	390	....	332	262	194	166	Firm jelly	Cloudy
Rice	11.5 to 1	498	260	.....	243	....	204	179	140	78	Firm jelly	Cloudy
Potato (German)	21.5 to 1	2500	1660	1330	....	515	243	166	127	54	Liquid	Clear
Potato (Maine)	21.5 to 1	2400	1520	1200	....	580	247	140	127	54	Liquid	Clear
Sago	13.5 to 1	665	255	.....	78	....	27	27	....	....	Soft jelly	Cloudy
Arrowroot	19.5 to 1	432	650	.....	224	....	102	54	27	27	Liquid	Clear
Cassava	16.5 to 1	1800	810	.....	....	277	194	140	54	27	Liquid	Clear

Production Constants for Pounds of Cotton Yarn per Spindle Per 10 Hrs. at 100% Efficiency

Yarn No.	Twist Multipliers													Yarn No.
	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	
4.00	1,008	1,048	1,089	1,129	1,169	1,210	1,250	1,290	1,331	1,371	1,411	1,452	1,492	4.00
4.50	1,203	1,251	1,299	1,347	1,395	1,443	1,491	1,539	1,587	1,636	1,684	1,732	1,780	4.50
5.00	1,409	1,465	1,521	1,577	1,634	1,690	1,747	1,803	1,859	1,916	1,972	2,028	2,085	5.00
5.50	1,625	1,690	1,755	1,820	1,885	1,950	2,015	2,080	2,145	2,210	2,275	2,340	2,405	5.50
6.00	1,853	1,927	2,001	2,075	2,149	2,223	2,297	2,371	2,445	2,519	2,593	2,667	2,741	6.00
6.50	2,045	2,172	2,256	2,339	2,423	2,506	2,590	2,673	2,757	2,840	2,924	3,007	3,091	6.50
7.00	2,334	2,427	2,521	2,614	2,707	2,801	2,894	2,987	3,081	3,174	3,267	3,361	3,454	7.00
7.50	2,588	2,692	2,796	2,899	3,003	3,106	3,210	3,313	3,417	3,520	3,624	3,727	3,831	7.50
8.00	2,851	2,965	3,079	3,193	3,307	3,421	3,535	3,649	3,763	3,877	3,991	4,105	4,219	8.00
8.50	3,122	3,247	3,372	3,497	3,622	3,746	3,871	3,996	4,121	4,246	4,371	4,496	4,621	8.50
9.00	3,402	3,538	3,674	3,810	3,946	4,082	4,218	4,355	4,491	4,627	4,763	4,899	5,035	9.00
9.50	3,689	3,837	3,984	4,132	4,279	4,427	4,575	4,722	4,870	5,017	5,165	5,312	5,460	9.50
10.00	3,984	4,143	4,303	4,462	4,621	4,781	4,940	5,100	5,259	5,418	5,578	5,737	5,896	10.00
10.50	4,287	4,458	4,629	4,801	4,972	5,144	5,315	5,487	5,658	5,830	6,001	6,173	6,344	10.50
11.00	4,597	4,781	4,965	5,149	5,333	5,517	5,701	5,885	6,069	6,252	6,436	6,620	6,804	11.00
11.50	4,913	5,110	5,307	5,503	5,700	5,896	6,093	6,289	6,486	6,682	6,879	7,076	7,272	11.50
12.00	5,237	5,447	5,657	5,866	6,076	6,285	6,495	6,704	6,914	7,123	7,333	7,542	7,752	12.00
12.50	5,569	5,792	6,015	6,237	6,460	6,683	6,906	7,129	7,351	7,574	7,797	8,020	8,242	12.50
13.00	5,907	6,143	6,379	6,615	6,852	7,088	7,324	7,560	7,797	8,033	8,269	8,506	8,742	13.00
13.50	6,249	6,499	6,749	6,999	7,249	7,499	7,749	7,999	8,249	8,499	8,749	8,999	9,249	13.50
14.00	6,601	6,865	7,129	7,393	7,657	7,921	8,185	8,449	8,713	8,977	9,241	9,505	9,769	14.00
14.50	6,957	7,235	7,514	7,792	8,070	8,349	8,627	8,905	9,184	9,462	9,740	10,018	10,297	14.50
15.00	7,320	7,613	7,906	8,198	8,491	8,784	9,077	9,370	9,662	9,955	10,248	10,541	10,834	15.00
15.50	7,689	7,997	8,304	8,612	8,919	9,227	9,534	9,842	10,149	10,457	10,765	11,072	11,380	15.50
16.00	8,064	8,387	8,709	9,032	9,354	9,677	9,999	10,322	10,644	10,967	11,290	11,612	11,935	16.00
16.50	8,445	8,783	9,121	9,458	9,796	10,134	10,472	10,809	11,147	11,485	11,823	12,161	12,498	16.50
17.00	8,832	9,185	9,538	9,891	10,245	10,598	10,951	11,304	11,658	12,011	12,364	12,717	13,071	17.00
17.50	9,223	9,592	9,961	10,330	10,699	11,068	11,437	11,806	12,175	12,544	12,913	13,282	13,651	17.50
18.00	9,623	10,008	10,393	10,778	11,163	11,548	11,933	12,318	12,703	13,087	13,472	13,857	14,242	18.00
18.50	10,026	10,427	10,828	11,229	11,630	12,031	12,432	12,833	13,234	13,635	14,036	14,437	14,838	18.50
19.00	10,436	10,853	11,270	11,688	12,105	12,523	12,940	13,357	13,775	14,192	14,610	15,027	15,444	19.00
19.50	10,850	11,284	11,718	12,152	12,586	13,020	13,454	13,888	14,322	14,756	15,190	15,624	16,058	19.50
20.00	11,269	11,720	12,171	12,622	13,073	13,523	13,974	14,425	14,876	15,326	15,777	16,228	16,679	20.00
21.00	12,127	12,612	13,097	13,582	14,067	14,552	15,037	15,522	16,007	16,492	16,977	17,462	17,947	21.00
22.00	13,001	13,521	14,041	14,561	15,081	15,601	16,121	16,641	17,161	17,681	18,201	18,721	19,241	22.00
23.00	13,899	14,455	15,011	15,567	16,123	16,679	17,235	17,790	18,346	18,902	19,458	20,014	20,570	23.00
24.00	14,814	15,407	16,000	16,592	17,185	17,777	18,370	18,963	19,555	20,148	20,740	21,332	21,926	24.00
25.00	15,750	16,380	17,010	17,640	18,270	18,900	19,530	20,160	20,790	21,420	22,050	22,680	23,310	25.00
26.00	16,705	17,373	18,041	18,709	19,377	20,045	20,713	21,382	22,050	22,718	23,386	24,054	24,722	26.00
27.00	17,695	18,403	19,111	19,818	20,526	21,212	21,919	22,626	23,333	24,040	24,748	25,455	26,162	27.00
28.00	18,670	19,417	20,164	20,910	21,657	22,404	23,151	23,898	24,645	25,391	26,138	26,885	27,632	28.00
29.00	19,677	20,464	21,251	22,038	22,825	23,612	24,399	25,186	25,973	26,760	27,548	28,335	29,122	29.00
30.00	20,703	21,531	22,359	23,187	24,015	24,844	25,672	26,500	27,328	28,156	28,984	29,812	30,641	30.00
31.00	21,748	22,618	23,488	24,358	25,228	26,098	26,968	27,838	28,708	29,578	30,448	31,318	32,188	31.00
32.00	22,809	23,721	24,634	25,546	26,458	27,371	28,283	29,196	30,108	31,020	31,933	32,845	33,757	32.00
33.00	23,887	24,843	25,799	26,754	27,710	28,665	29,621	30,576	31,532	32,487	33,443	34,398	35,354	33.00
34.00	24,980	25,979	26,978	27,978	28,977	29,976	30,975	31,974	32,974	33,973	34,972	35,971	36,970	34.00
35.00	26,089	27,133	28,177	29,220	30,263	31,307	32,351	33,395	34,438	35,482	36,525	37,569	38,613	35.00
36.00	27,216	28,305	29,393	30,482	31,571	32,659	33,748	34,836	35,925	37,014	38,102	39,191	40,280	36.00
37.00	28,359	29,493	30,628	31,762	32,896	34,031	35,165	36,299	37,434	38,568	39,703	40,837	41,971	37.00
38.00	29,513	30,694	31,874	33,055	34,235	35,416	36,596	37,777	38,957	40,138	41,319	42,499	43,680	38.00
39.00	30,688	31,916	33,143	34,371	35,598	36,826	38,053	39,281	40,508	41,736	42,963	44,191	45,418	39.00
40.00	31,374	32,629	33,884	35,139	36,394	37,649	38,904	40,159	41,414	42,669	43,924	45,179	46,434	40.00
41.00	33,078	34,401	35,724	37,047	38,370	39,693	41,017	42,340	43,663	44,986	46,309	47,632	48,955	41.00
42.00	34,297	35,669	37,041	38,413	39,785	41,157	42,529	43,901	45,273	46,645	48,016	49,388	50,760	42.00
43.00	35,526	36,947	38,368	39,789	41,210	42,631	44,052	45,473	46,894	48,315	49,736	51,157	52,578	43.00
44.00	36,773	38,244	39,715	41,186	42,657	44,128	45,599	47,070	48,541	50,012	51,483	52,954	54,425	44.00
45.00	38,035	39,556	41,077	42,599	44,120	45,641	47,163	48,684	50,205	51,727	53,248	54,769	56,291	45.00
46.00	39,309	40,881	42,453	44,026	45,598	47,170	48,743	50,315	51,887	53,460	55,032	56,604	58,177	46.00
47.00	40,601	42,225	43,849	45,473	47,097	48,721	50,346	51,970	53,594	55,218	56,842	58,466	60,090	47.00
48.00	41,901	43,577	45,253	46,929	48,605	50,281	51,957	53,633	55,309	56,985	58,661	60,337	62,013	48.00
49.00	43,218	44,947	46,675	48,404	50,133	51,862	53,590	55,319	57,048	58,776	60,505	62,234	63,963	49.00
50.00	44,547	46,329	48,111	49,893	51,675	53,457	55,239	57,021	58,802	60,584	62,366	64,148	65,930	50.00
52.00	47,246	49,136	51,026	52,916	54,806	56,696	58,586	60,475	62,365	64,255	66,145	68,035	69,925	52.00
54.00	50,003	52,003	54,003	56,003	58,003	60,003	62,003	64,003	66,003	68,004	70,004	72,004	74,004	54.00
56.00	52,800	54,912	57,024	59,136	61,248	63,360	65,472	67,584	69,696	71,808	73,920	76,032	78,144	56.00
58.00	55,658	57,884	60,110	62,336	64,563	66,789	69,016	71,242	73,468	75,695	77,921	80,147	82,373	58.00
60.00	58,560	60,902	63,245	65,587	67,930	70,272	72,614	74,956	77,299	79,641	81,984	84,326	86,668	60.00
65.00	65,103	67,707	70,311	72,915	75,519	78,123	80,727	83,332	85,936	88,540	91,144	93,748	96,352	65.00
70.00	73,797	76,749	79,701	82,653	85,605	88,556	91,508	94,460	97,412	100,364	103,316	106,268	109,219	70.00
75.00	81,837	85,110	88,384	91,657	94,931	98,204	101,478	104,751	108,025	111,298	114,572	117,845	121,119	75.00
80.00	90,154	93,760	97,366	100,972	104,578	108,184	111,790	115,396	119,002	122,608	126,215	129,821	133,427	80.00
85.00	98,746	102,696	106,647	110,596	114,545	118,495	122,445	126,395	130,345	134,295	138,245	142,195	146,144	85.00
90.00	107,583	111,886	116,189	120,492	124,796	129,099	133,402	137,706	142,009	146,312	150,616	154,919	159,222	90.00
95.00	116,716	121,385	126,053	130,722	135,391	140,059	144,728	149,396	154,065	158,734	163,402	168,071	172,740	95.00
100.00	126,000	131,040	136,080	141,120	146,160	151,200	156,240	161,280	166,320	171,360	176,400	181,440	186,480	100.00

Courtesy Whitin Machine Works

Use of this table is illustrated by the following example: 20s yarn is being spun with a twist multiplier of 4.60 and a spindle speed of 9,375 rpm.; frame efficiency is 92%. What is the production per spindle per 10 hrs?

The constant for 20s yarn with a multiplier of 4.60 is found on the table to be 20,736.

$$\frac{9,375}{20,736} = 0.452 \text{ lbs. per 10 hrs. per spindle at } 100\%$$

$$0.452 \times 0.92 = 0.416 \text{ lbs. per 10 hrs. per spindle at } 92\%$$

If the frame efficiency is not known, it may be determined by comparing the actual production for a given period with that calculated from the table.

Yarn No.	Twist Multipliers													Yarn No.
	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	
4.00	1,532	1,572	1,613	1,653	1,693	1,734	1,774	1,814	1,855	1,895	1,935	1,976	2,016	4.00
4.50	1,828	1,876	1,924	1,972	2,020	2,068	2,117	2,165	2,213	2,261	2,309	2,357	2,405	4.50
5.00	2,141	2,198	2,254	2,310	2,367	2,423	2,479	2,536	2,592	2,648	2,705	2,761	2,817	5.00
5.50	2,470	2,535	2,600	2,665	2,730	2,795	2,860	2,925	2,990	3,055	3,120	3,185	3,250	5.50
6.00	2,815	2,889	2,964	3,038	3,112	3,186	3,260	3,334	3,408	3,482	3,556	3,630	3,704	6.00
6.50	3,174	3,258	3,342	3,425	3,509	3,592	3,676	3,759	3,843	3,926	4,010	4,093	4,177	6.50
7.00	3,547	3,641	3,734	3,827	3,921	4,014	4,107	4,201	4,294	4,387	4,481	4,574	4,668	7.00
7.50	3,934	4,038	4,141	4,245	4,348	4,452	4,556	4,659	4,763	4,866	4,970	5,073	5,177	7.50
8.00	4,333	4,447	4,561	4,675	4,789	4,903	5,017	5,131	5,245	5,359	5,473	5,587	5,701	8.00
8.50	4,745	4,870	4,995	5,120	5,245	5,370	5,495	5,620	5,744	5,869	5,994	6,119	6,244	8.50
9.00	5,171	5,307	5,443	5,579	5,715	5,851	5,987	6,124	6,260	6,396	6,532	6,668	6,804	9.00
9.50	5,608	5,755	5,903	6,050	6,198	6,345	6,493	6,640	6,788	6,936	7,083	7,231	7,378	9.50
10.00	6,056	6,215	6,375	6,534	6,693	6,853	7,012	7,171	7,331	7,490	7,650	7,809	7,968	10.00
10.50	6,516	6,687	6,858	7,030	7,201	7,373	7,544	7,716	7,887	8,059	8,230	8,402	8,573	10.50
11.00	6,988	7,172	7,356	7,540	7,724	7,907	8,091	8,275	8,459	8,643	8,827	9,011	9,195	11.00
11.50	7,469	7,665	7,862	8,058	8,255	8,451	8,648	8,844	9,041	9,237	9,434	9,631	9,827	11.50
12.00	7,961	8,171	8,380	8,590	8,799	9,009	9,218	9,428	9,637	9,847	10,056	10,266	10,475	12.00
12.50	8,465	8,688	8,911	9,133	9,356	9,579	9,802	10,025	10,247	10,470	10,693	10,916	11,138	12.50
13.00	8,978	9,214	9,451	9,687	9,923	10,159	10,396	10,632	10,868	11,104	11,341	11,577	11,813	13.00
13.50	9,499	9,749	9,999	10,249	10,499	10,749	10,999	11,249	11,499	11,749	11,999	12,249	12,499	13.50
14.00	10,033	10,297	10,561	10,825	11,089	11,354	11,618	11,882	12,146	12,410	12,674	12,938	13,202	14.00
14.50	10,575	10,853	11,132	11,410	11,688	11,966	12,245	12,523	12,801	13,080	13,358	13,636	13,914	14.50
15.00	11,126	11,419	11,712	12,005	12,298	12,590	12,883	13,176	13,469	13,762	14,054	14,347	14,640	15.00
15.50	11,687	11,995	12,302	12,610	12,917	13,225	13,533	13,840	14,148	14,455	14,763	15,070	15,378	15.50
16.00	12,257	12,580	12,902	13,225	13,548	13,870	14,193	14,515	14,838	15,160	15,483	15,805	16,128	16.00
16.50	12,836	13,174	13,512	13,850	14,187	14,525	14,863	15,201	15,539	15,876	16,214	16,552	16,890	16.50
17.00	13,424	13,777	14,130	14,484	14,837	15,190	15,543	15,897	16,250	16,603	16,956	17,310	17,663	17.00
17.50	14,020	14,389	14,758	15,127	15,496	15,864	16,233	16,602	16,971	17,340	17,709	18,078	18,447	17.50
18.00	14,627	15,012	15,397	15,782	16,167	16,552	16,937	17,322	17,707	18,091	18,476	18,861	19,246	18.00
18.50	15,239	15,640	16,041	16,442	16,843	17,244	17,645	18,046	18,447	18,848	19,249	19,650	20,051	18.50
19.00	15,862	16,279	16,697	17,114	17,532	17,949	18,366	18,784	19,201	19,619	20,036	20,453	20,871	19.00
19.50	16,492	16,926	17,360	17,794	18,229	18,662	19,096	19,530	19,964	20,398	20,832	21,266	21,700	19.50
20.00	17,130	17,580	18,031	18,482	18,933	19,383	19,834	20,285	20,736	21,187	21,637	22,088	22,539	20.00
21.00	18,432	18,918	19,403	19,888	20,373	20,858	21,343	21,828	22,313	22,798	23,283	23,768	24,253	21.00
22.00	19,761	20,281	20,801	21,321	21,841	22,361	22,881	23,401	23,921	24,441	24,961	25,481	26,001	22.00
23.00	21,126	21,682	22,238	22,794	23,349	23,906	24,462	25,018	25,574	26,130	26,686	27,242	27,798	23.00
24.00	22,518	23,111	23,703	24,296	24,888	25,481	26,074	26,666	27,259	27,851	28,444	29,037	29,629	24.00
25.00	23,940	24,570	25,200	25,830	26,460	27,090	27,720	28,350	28,980	29,610	30,240	30,870	31,500	25.00
26.00	25,391	26,059	26,727	27,395	28,063	28,731	29,400	30,068	30,736	31,404	32,072	32,740	33,409	26.00
27.00	26,869	27,576	28,283	28,990	29,697	30,404	31,111	31,818	32,525	33,232	33,939	34,647	35,354	27.00
28.00	28,379	29,125	29,872	30,619	31,366	32,113	32,860	33,606	34,353	35,100	35,847	36,594	37,340	28.00
29.00	29,909	30,696	31,483	32,270	33,057	33,844	34,631	35,418	36,205	36,992	37,779	38,567	39,354	29.00
30.00	31,469	32,297	33,125	33,953	34,781	35,609	36,437	37,266	38,094	38,922	39,750	40,578	41,406	30.00
31.00	33,058	33,928	34,798	35,668	36,538	37,408	38,278	39,147	40,017	40,887	41,757	42,627	43,497	31.00
32.00	34,670	35,582	36,494	37,407	38,319	39,232	40,144	41,056	41,969	42,881	43,793	44,706	45,618	32.00
33.00	36,309	37,265	38,220	39,176	40,131	41,087	42,042	42,998	43,953	44,909	45,864	46,820	47,775	33.00
34.00	37,970	38,969	39,968	40,967	41,966	42,966	43,965	44,964	45,963	46,962	47,962	48,961	49,960	34.00
35.00	39,656	40,700	41,743	42,787	43,830	44,874	45,918	46,961	48,005	49,048	50,092	51,136	52,179	35.00
36.00	41,368	42,457	43,546	44,634	45,723	46,812	47,900	48,989	50,077	51,166	52,255	53,343	54,432	36.00
37.00	43,106	44,240	45,374	46,509	47,643	48,777	49,912	51,046	52,180	53,315	54,449	55,584	56,718	37.00
38.00	44,860	46,041	47,221	48,402	49,582	50,763	51,943	53,124	54,304	55,485	56,665	57,846	59,026	38.00
39.00	46,646	47,873	49,101	50,328	51,556	52,783	54,011	55,238	56,466	57,693	58,921	60,148	61,376	39.00
40.00	47,688	48,943	50,198	51,453	52,708	53,963	55,218	56,473	57,728	58,983	60,238	61,493	62,748	40.00
41.00	50,278	51,602	52,925	54,248	55,571	56,894	58,217	59,540	60,863	62,186	63,510	64,833	66,156	41.00
42.00	52,132	53,504	54,876	56,248	57,620	58,992	60,364	61,735	63,107	64,479	65,851	67,223	68,595	42.00
43.00	53,999	55,420	56,841	58,262	59,683	61,104	62,525	63,946	65,368	66,789	68,210	69,631	71,052	43.00
44.00	55,895	57,366	58,837	60,308	61,779	63,250	64,721	66,192	67,663	69,134	70,605	72,076	73,547	44.00
45.00	57,812	59,334	60,855	62,376	63,898	65,419	66,940	68,462	69,983	71,505	73,026	74,547	76,069	45.00
46.00	59,749	61,321	62,894	64,466	66,038	67,611	69,183	70,755	72,328	73,900	75,472	77,045	78,617	46.00
47.00	61,714	63,338	64,962	66,586	68,210	69,834	71,458	73,082	74,706	76,330	77,954	79,578	81,202	47.00
48.00	63,689	65,365	67,041	68,717	70,393	72,069	73,745	75,421	77,097	78,773	80,449	82,125	83,801	48.00
49.00	65,691	67,420	69,149	70,878	72,606	74,335	76,064	77,792	79,521	81,250	82,979	84,707	86,436	49.00
50.00	67,712	69,494	71,276	73,058	74,839	76,621	78,403	80,185	81,967	83,749	85,531	87,313	89,095	50.00
52.00	71,815	73,704	75,594	77,484	79,374	81,264	83,154	85,044	86,934	88,823	90,713	92,603	94,493	52.00
54.00	76,004	78,004	80,004	82,004	84,004	86,004	88,005	90,005	92,005	94,005	96,005	98,005	100,005	54.00
56.00	80,256	82,368	84,480	86,592	88,704	90,816	92,928	95,040	97,152	99,264	101,376	103,488	105,600	56.00
58.00	84,600	86,826	89,052	91,279	93,505	95,731	97,958	100,184	102,410	104,637	106,863	109,089	111,315	58.00
60.00	89,010	91,353	93,696	96,038	98,380	100,723	103,065	105,408	107,750	110,092	112,435	114,777	117,120	60.00
65.00	98,956	101,560	104,164	106,769	109,373	111,977	114,581	117,185	119,789	122,393	124,997	127,601	130,206	65.00
70.00	112,171	115,123	118,075	121,027	123,979	126,931	129,883	132,834	135,786	138,738	141,690	144,642	147,594	70.00
75.00	124,392	127,666	130,939	134,213	137,486	140,760	144,033	147,307	150,580	153,854	157,127	160,401	163,674	75.00
80.00	137,033	140,639	144,245	147,851	151,457	155,064	158,670	162,276	165,882	169,488	173,094	176,700	180,307	80.00
85.00	150,094	154,044	157,994	161,944	165,894	169,843	173,793	177,743	181,693	185,643	189,593	193,543	197,492	85.00
90.00	163,526	167,829	172,132	176,435	180,739	185,042	189,345	193,649	197,952	202,255	206,559	210,862	215,165	90.00
95.00	177,408	182,077	186,745	191,414	196,083	200,751	205,420	210,089	214,757	219,426	224,095	228,763	233,432	95.00
100.00	191,520	196,560	201,600	206,640	211,680	216,720	221,760	226,800	231,840	236,880	241,920	246,960	252,000	100.00

Cotton-Mill Calculations

(See page 13 for a convenient table of square roots.)

ROVING AND YARN NUMBER

1 lb. = 7,000 grains
1 skein or lea = 120 yds.
1 hank = 840 yds.
yarn number (or hank roving) = hanks in 1 lb.
yarn number (or HR) = 1 ÷ weight (in lbs.) of 1 hank
pounds in 1 hank = 1 ÷ yarn number (or HR)
yarn number (or HR) = hanks ÷ weight (in lbs.)
pounds = hanks ÷ yarn number (or HR)
yarn number (or HR) = 8.33 ÷ wt. (in grs.) of 1 yd.

$$\text{yarn number (or HR)} = \frac{8.33 \times \text{No. of yds.}}{\text{wt. (in grs.)}}$$

$$\text{wt. (in grs.)} = \frac{8.33 \times \text{No. yds.}}{\text{yarn number (or HR)}}$$

$$\text{No. yds.} = \frac{3 \times \text{wt. (in grs.)} \times \text{yarn number (or HR)}}{25}$$

Roving or yarn on bobbin, spool, or beam

$$\text{yarn number (or HR)} = \frac{\text{No. ends} \times \text{yds. in each end}}{840 \times \text{wt. (in lbs.)}}$$

$$\text{yds. in each end} = \frac{840 \times \text{wt. (in lbs.)} \times \text{yarn number (or HR)}}{\text{No. ends}}$$

$$\text{wt. of yarn on beam, etc.} = \frac{\text{No. ends} \times \text{yds. in each end}}{840 \times \text{yarn number (or HR)}}$$

$$\text{No. ends on beam} = \frac{840 \times \text{wt. (in lbs.) of yarn on beam} \times \text{yarn number}}{\text{yds. in each end}}$$

DRAFT

$$\text{actual draft} = \frac{\text{wt. of 1 yd. fed}}{\text{wt. of 1 yd. delivered}} = \frac{\text{length of 1 lb. delivered}}{\text{length of 1 lb. fed}}$$

$$\text{mechanical draft} = \frac{\text{surface speed of delivery roll}}{\text{surface speed of feed roll}}$$

$$\text{draft} = \frac{\text{doublings} \times \text{wt. per yd. fed}}{\text{wt. per yd. delivered}}$$

$$\text{slubber draft} = \frac{12 \times \text{gr. sliver} \times \text{hank roving}}{100}$$

$$\text{intermediate draft} = \frac{\text{doublings} \times \text{HR delivered}}{\text{HR fed}}$$

$$\text{spinning-frame draft} = \frac{\text{doublings} \times \text{yarn No. delivered}}{\text{HR fed}}$$

$$\text{wt. per yd. fed} = \frac{\text{draft} \times \text{wt. per yd. delivered}}{\text{doublings}}$$

LAY AND TWIST

laps per inch of roving $= 9.3 \times \sqrt{\text{HR}}$
laps per inch of yarn $= 30 \times \sqrt{\text{yarn No.}}$
laps per inch of yarn in cloth $= 36 \times \sqrt{\text{yarn No.}}$

$$\text{diameter of yarn in cloth} = \frac{1}{36 \times \sqrt{\text{yarn No.}}}$$

$$\text{turns per inch} = \text{twist multiplier} \times \sqrt{\text{yarn No. (or HR)}}$$

CLOTH

$$\text{yds. per lb.} = \frac{\text{sq. ins. in sample} \times 7{,}000}{\text{wt. (in grs.) of sample} \times \text{width of cloth} \times 36}$$

$$\text{lbs. of filling in cloth} = \frac{\text{yds. of cloth} \times \text{reed width (in inches)} \times \text{picks per in.}}{840 \times \text{filling yarn No.}}$$

$$\text{grs. of filling in cloth} = \frac{25 \times \text{yds. of cloth} \times \text{reed width (in inches)} \times \text{picks per in.}}{3 \times \text{filling yarn No.}}$$

$$\text{lbs. of sized warp in cloth} = \frac{\text{yds. of cloth} \times \text{No. ends} \times (100\% + \%\ \text{of size})}{(100\% - \%\ \text{contraction}) \times 840 \times \text{warp yarn No.}}$$

PICKERS

Breaker

$$\text{draft} = \frac{\text{surface speed of delivery (front calender) roll}}{\text{surface speed of feed roll}}$$

$$\frac{\text{rpm. of calender roll}}{\text{rpm. of feed roll}} = \frac{\text{S.S. of calender roll} \times \text{dia. of feed roll}}{\text{S.S. of feed roll} \times \text{dia. of calender roll}}$$

S.S. of roll = rpm. × circumference

$$\text{draft} = \frac{\text{product of all driver-gear teeth} \times \text{dia. of calender roll}}{\text{product of all driven-gear teeth} \times \text{dia. of feed roll}}$$

$$\frac{\text{rpm. calendar roll}}{\text{rpm. beater}} = \frac{\text{dia. feed pulley} \times \text{driver gears}}{\text{dia. clutch pulley} \times \text{driven gears}}$$

$$\text{rpm. calender roll} = \frac{\text{dia. feed pulley} \times \text{driver gears} \times \text{rp m. beater}}{\text{dia. clutch pulley} \times \text{driven gears}}$$

$$\frac{\text{S.S. of calender roll}}{\text{cir. of calender roll}} = \frac{\text{dia. feed pulley} \times \text{driver gears} \times \text{rpm. beater}}{\text{dia. clutch pulley} \times \text{driven gears}}$$

$$\text{S.S. of calender roll (or inches of lap per min.)} = \frac{\text{dia. feed pulley} \times \text{driver gears} \times \text{rpm. beater} \times \text{cir. calender roll}}{\text{dia. clutch pulley} \times \text{driven gears}}$$

inches of lap in 8 hrs. (100%) = S.S. of calender roll × (8 × 60)

$$\text{yds. of lap in 8 hrs.} = \frac{\text{S.S. calender roll} \times 480}{36}$$

$$\text{lbs. of lap in 8 hrs.} = \frac{\text{oz. lap} \times \text{yds. of lap in 8 hrs.}}{16}$$

$$\text{production constant} = \frac{\text{production}}{\text{oz. lap} \times \text{dia. feed pulley} \times \text{rpm. beater}}$$

$$\text{production} = \text{constant} \times \text{oz. lap} \times \text{dia. feed pulley} \times \text{rpm. beater}$$

$$\text{dia. feed pulley} = \frac{\text{production}}{\text{constant} \times \text{oz. lap} \times \text{rpm. beater}}$$

Finisher

$$\text{draft} = \frac{\text{driver gears} \times \text{dia. front calender roll} \times \text{dia. driver cone}}{\text{driven gears} \times \text{dia. feed roll} \times \text{dia. driven cone}}$$

$$\frac{\text{driven draft gear}}{\text{driver draft (cone) gear}} = \frac{\text{driven gears} \times \text{dia. calender roll} \times \text{dia. driver cone}}{\text{driver gears} \times \text{draft} \times \text{dia. feed roll} \times \text{dia. driven cone}}$$

$$\text{draft constant} = \frac{\text{driver draft gear}}{\text{driven draft gear}} \times \text{draft}$$

$$\frac{\text{driver draft gear}}{\text{driven draft gear}} = \frac{\text{draft constant}}{\text{draft}}$$

$$\text{draft} = \text{draft constant} \times \frac{\text{driven draft gear}}{\text{driver draft gear}}$$

To calculate a change of draft:

$$\frac{\text{driver draft gear needed}}{\text{driven draft gear needed}} = \frac{\text{present driver}}{\text{present driven}} \times \frac{\text{present draft}}{\text{needed draft}}$$

$$\frac{\text{driver draft gear needed}}{\text{driven draft gear needed}} = \frac{\text{present driver}}{\text{present driven}} \times \frac{\text{present oz. lap delivered}}{\text{needed oz. lap}}$$

$$\frac{\text{driver draft gear}}{\text{driven draft gear}} = \frac{\text{draft constant} \times \text{oz. lap delivered}}{\text{doublings} \times \text{oz. lap fed}}$$

$$\text{beats per inch} = \frac{\text{No. blades in beater} \times \text{rpm. beater}}{3.1416 \times \text{dia. feed roll} \times \text{rpm. feed roll}}$$

$$\text{feed-pulley dia. needed} = \frac{\text{present beats per in.} \times \text{dia. present feed pulley}}{\text{needed beats per in.}}$$

$$\text{rpm. of beater} = \frac{3.1416 \times \text{dia. feed roll} \times \text{rpm. feed roll} \times \text{beats per in.}}{\text{No. blades in beater}}$$

CARDS

Draft

$$\text{draft} = \frac{\text{product of driver gears} \times \text{dia. coiler calender roll}}{\text{product of driven gears} \times \text{dia. lap roll}}$$

draft constant = draft × draft change gear
draft change gear = draft constant ÷ draft
draft = draft constant ÷ draft change gear

To calculate a change of draft:

If the same oz. lap is to be used:

$$\text{draft gear needed} = \frac{\text{present draft gear} \times \text{present draft}}{\text{needed draft}}$$

$$\text{draft gear needed} = \frac{\text{present draft gear} \times \text{gr. sliver needed}}{\text{present gr. sliver}}$$

If the oz. lap is to be changed:

$$\text{draft gear} = \frac{\text{draft constant} \times \text{gr. sliver}}{437.5 \times \text{oz. lap}}$$

$$\text{draft gear needed} = \frac{\text{present draft gear} \times \text{present oz. lap} \times \text{gr. sliver needed}}{\text{oz. lap to be used} \times \text{present gr. sliver}}$$

Production

$$\text{rpm. doffer} = \frac{\text{driver gears} \times \text{dia. small lickerin pulley} \times \text{rpm. cylinder}}{\text{driven gears} \times \text{dia. lickerin drive pulley} \times \text{dia. doffer production pulley}}$$

$$\text{production gear needed (doffer change gear)} = \frac{\text{present gear} \times \text{present gr. sliver} \times \text{production needed}}{\text{gr. sliver needed} \times \text{present production}}$$

$$\text{production constant} = \frac{\text{production}}{\text{gr. sliver} \times \text{rpm. doffer}}$$

$$\text{production} = \text{production constant} \times \text{gr. sliver} \times \text{rpm. doffer}$$

DRAWING FRAME

Draft

draft constant = draft × draft gear
draft gear = draft constant ÷ draft
draft = draft constant ÷ draft gear

$$\text{draft gear} = \frac{\text{draft constant} \times \text{gr. sliver delivered}}{6 \times \text{gr. sliver fed}}$$

To calculate a change of draft:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present draft}}{\text{needed draft}}$$

If gr. sliver fed and gr. sliver delivered are both changed:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present gr. sliver fed} \times \text{gr. sliver to be delivered}}{\text{present gr. sliver delivered} \times \text{gr. sliver to be fed}}$$

If gr. sliver fed remains the same and gr. sliver delivered is changed:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{gr. sliver to be delivered}}{\text{present gr. sliver delivered}}$$

If gr. sliver fed is changed and gr. sliver delivered remains the same:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present sliver fed}}{\text{gr. sliver to be fed}}$$

Production

$$\text{production constant} = \frac{\text{production}}{\text{gr. sliver fed} \times \text{rpm. front roll}}$$

$$\text{production} = \text{production constant} \times \text{gr. sliver} \times \text{rpm. front roll}$$

$$\text{production in 8 hrs.} = \frac{480 \times \text{rpm. front roll} \times \text{cir. front roll} \times \text{gr. sliver}}{36 \times 7{,}000 \times \text{No. deliveries}}$$

ROVING FRAME

Draft

Slubber

$$\text{draft} = \frac{12 \times \text{gr. sliver fed} \times \text{hank roving delivered}}{100}$$

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present draft}}{\text{draft needed}}$$

If gr. sliver and hank roving are changed:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present HR} \times \text{present gr. sliver}}{\text{HR needed} \times \text{gr. sliver needed}}$$

If gr. sliver remains the same but hank roving is changed:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present HR}}{\text{HR needed}}$$

If gr. sliver is changed but hank roving remains the same:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present gr. sliver}}{\text{gr. sliver needed}}$$

Intermediate

If HR fed and HR delivered are both changed but doublings remain the same:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present HR delivered} \times \text{HR to be fed}}{\text{HR to be delivered} \times \text{present HR fed}}$$

If HR fed and doublings remain the same but HR delivered is changed:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present HR delivered}}{\text{HR to be delivered}}$$

If HR fed is changed but HR delivered and doublings remain the same:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{HR to be fed}}{\text{present HR fed}}$$

All fly frames

To change wt. per yd. delivered, with wt. per yd. fed and doublings remaining unchanged:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{wt. (in grs.) to be delivered}}{\text{present wt. (in grs.) delivered}}$$

Twist

tpi. = rpm. of flyer ÷ (rpm. front roll × cir. front roll)
twist constant = twist gear × tpi.
twist gear = twist constant ÷ tpi.
tpi. = twist constant ÷ twist gear

To change tpi.:

$$\text{twist gear needed} = \frac{\text{present gear} \times \text{present tpi.}}{\text{tpi. needed}}$$

If hank roving is changed:

$$\text{twist gear needed} = \frac{\text{present gear} \times \sqrt{\text{present HR}}}{\sqrt{\text{HR needed}}}$$

Lay

lay constant = lays per inch × lay gear
lay gear = lay constant ÷ lays per inch

If lays per inch are to be changed:

$$\text{lay gear needed} = \frac{\text{present gear} \times \text{present lays per inch}}{\text{lays per inch needed}}$$

If hank roving is to be changed but the twist multiplier remains the same:

$$\text{lay gear needed} = \frac{\text{present gear} \times \sqrt{\text{present HR}}}{\sqrt{\text{HR needed}}}$$

Tension

$$\text{tension gear needed} = \frac{\text{present gear} \times \sqrt{\text{present HR}}}{\sqrt{\text{HR needed}}}$$

Running time

(minutes bobbin in creel will last)
minutes = inches of roving on bobbin ÷ surface speed of back roll

Production

$$\text{minutes per doff} = \frac{3 \times 1.05 \times \text{HR} \times \text{oz. on full bobbin}}{0.5236 \times \text{rpm. front roll} \times \text{dia. front roll}}$$

$$\text{doffs in 8 hrs.} = \frac{480}{\text{mins. per doff} + \text{mins. for doffing}}$$

lbs. in 8 hrs. = doffs in 8 hrs. × lbs. per doff

SPINNING FRAME

Spindle speed

Band drive

$$\frac{\text{rpm. of spindle whorl}}{\text{rpm. of cylinder}} = \frac{\text{dia. of cylinder} + 1/8 \text{ in.}}{\text{dia. of whorl} + 3/16 \text{ in.}}$$

Tape drive

$$\frac{\text{rpm. of spindle whorl}}{\text{rpm. of cylinder}} = \frac{\text{dia. of cylinder} + 1/16 \text{ in.}}{\text{dia. of whorl} + 1/16 \text{ in.}}$$

Twist

$$\text{tpi.} = \frac{\text{rpm. of spindle}}{\text{surface speed of front roll}}$$

$$\text{rpm. front roll} = \frac{\text{S.S. front roll}}{\text{cir. front roll}}$$

$$\text{tpi.} = \frac{\text{driven gears} \times (\text{rpm. whorl} + \text{rpm. cylinder})}{\text{driver gears} \times \text{cir. front roll}}$$

$$\text{twist gear} = \frac{\text{driven gears} \times (\text{rpm. whorl} + \text{rpm. cylinder})}{\text{driver gears} \times \text{tpi.} \times \text{cir. front roll}}$$

twist constant = tpi. × twist gear
twist gear = twist constant ÷ tpi.
tpi. = twist constant ÷ twist gear

$$\text{twist gear} = \frac{\text{twist constant}}{\text{twist multiplier} \times \sqrt{\text{yarn No}}}$$

To calculate twist changes:

$$\text{twist gear needed} = \frac{\text{present tpi.} \times \text{present twist gear}}{\text{tpi. needed}}$$

$$\text{twist gear needed} = \frac{\sqrt{\text{present yarn No.}} \times \text{present twist gear}}{\sqrt{\text{yarn No. needed}}}$$

Draft

$$\text{draft} = \frac{\text{driven roll gears} \times \text{dia. front roll}}{\text{driver roll gears} \times \text{dia. back roll}}$$

$$\text{draft gear} = \frac{\text{driven roll gears} \times \text{dia. front roll}}{\text{driver gear on front roll} \times \text{draft} \times \text{dia. back roll}}$$

draft constant = draft gear × draft
draft gear = draft constant ÷ draft
draft = draft constant ÷ draft gear

$$\text{actual draft} = \frac{\text{yarn No.} \times \text{doublings}}{\text{HR fed}}$$

To calculate draft changes:

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present draft}}{\text{needed draft}}$$

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present yarn No.} \times \text{HR to be used}}{\text{yarn No. needed} \times \text{present HR}}$$

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{present yarn No.}}{\text{yarn No. needed}}$$

$$\text{draft gear needed} = \frac{\text{present gear} \times \text{wt. of 120 yds. of yarn to be spun}}{\text{wt. of 120 yds. of present yarn}}$$

Lay

$$\text{lay gear needed} = \frac{\text{present gear} \times \sqrt{\text{present yarn No.}}}{\sqrt{\text{yarn No. needed}}}$$

Production

$$\text{hanks of yarn per spindle in 8 hrs.} = \frac{8 \times 60 \times 3.1416 \times \text{dia. front roll} \times \text{rpm. front roll}}{36 \times 840}$$

LOOM

Pick gear

ppm. = ppi. × surface speed of take-up roll
S.S. take-up roll = rpm. × cir.
ppm. = ppi. × rpm. take-up roll × cir. take-up roll

If the loom has a pick-pawl take-up (pick gear is a driven gear):

$$\text{ppi.} = \frac{\text{driven gears in pick-gear chain}}{\text{driver gears} \times (\text{cir. take-up roll} - 2\tfrac{1}{2}\% \text{ cir. take-up roll})}$$

$$\text{pick gear} = \frac{\text{driver gears in pick-gear chain} \times \text{ppi.} \times 0.975 \text{ cir. take-up roll}}{\text{driven gears (except pick gear)}}$$

pick constant = pick gear ÷ ppi.
pick gear = pick constant × ppi.

If the loom has a double-worm take-up (pick gear is a driver gear):

production = pick gear × ppi.
pick gear = pick constant ÷ ppi.

$$\text{pick gear needed} = \frac{\text{present gear} \times \text{ppi. needed}}{\text{present ppi.}}$$

Comparative Roll Speeds for Same Yarn Delivery

Roll speeds (rpm.)				Yarn delivered	Roll speeds (rpm.)				Yarn delivered	Roll speeds (rpm.)				Yarn delivered	Roll speeds (rpm.)				Yarn delivered
7/8-in. roll	1-in. roll	1 1/16-in. roll	1 1/8-in. roll	(ins. per min.)	7/8-in. roll	1-in. roll	1 1/16-in. roll	1 1/8-in. roll	(ins. per min.)	7/8-in. roll	1-in. roll	1 1/16-in. roll	1 1/8-in. roll	(ins. per min.)	7/8-in. roll	1-in. roll	1 1/16-in. roll	1 1/8-in. roll	(ins. per min.)
37	32	30	28	101	94	82	77	73	258	151	132	124	117	415	208	182	171	162	572
38	33	31	29	104	95	83	78	74	261	152	133	125	118	418	209	183	172	163	575
39	34	32	30	107	96	84	79	75	264	153	134	126	119	421	210	184	173	164	578
40	35	33	31	110	97	85	80	75	267	154	135	127	120	424	211	185	174	164	581
41	36	34	32	113	98	86	81	76	270	155	136	128	121	427	213	186	175	165	584
42	37	35	33	116	99	87	82	77	273	156	137	129	122	430	214	187	176	166	587
43	38	36	34	119	100	88	83	78	276	158	138	130	123	434	215	188	177	167	591
45	39	37	35	123	102	89	84	79	280	159	139	131	12[illegible]	437	216	189	178	168	594
46	40	38	36	126	103	90	85	80	283	160	140	132	124	440	217	190	179	169	597
47	41	39	36	129	104	91	86	81	286	161	141	133	125	443	218	191	180	170	600
48	42	40	37	132	105	92	87	82	289	162	142	134	126	446	219	192	181	171	603
49	43	40	38	135	106	93	88	83	292	163	143	135	127	449	221	193	182	172	606
50	44	41	39	138	107	94	88	83	295	164	144	136	128	452	222	194	183	172	609
51	45	42	40	141	108	95	89	84	298	166	145	136	129	456	223	195	184	173	613
53	46	43	41	145	110	96	90	85	302	167	146	137	130	459	224	196	184	174	616
54	47	44	42	148	111	97	91	86	305	168	147	138	131	462	225	197	185	175	619
55	48	45	43	151	112	98	92	87	308	169	148	139	131	465	226	198	186	176	622
56	49	46	44	154	113	99	93	88	311	170	149	140	132	468	227	199	187	177	625
57	50	47	44	157	114	100	94	89	314	171	150	141	133	471	229	200	188	178	628
58	51	48	45	160	115	101	95	90	317	172	151	142	134	474	230	201	189	179	631
59	52	49	46	163	116	102	96	91	320	174	152	143	135	478	231	202	190	180	635
61	53	50	47	166	118	103	97	91	324	175	153	144	136	481	232	203	191	181	638
62	54	51	48	170	119	104	98	92	327	176	154	145	137	484	233	204	192	181	640
63	55	52	49	173	120	105	99	93	330	177	155	146	138	487	234	205	193	182	644
64	56	53	50	176	121	106	100	94	333	178	156	147	139	490	235	206	194	183	647
65	57	54	51	179	122	107	101	95	336	179	157	148	139	493	237	207	195	184	650
66	58	55	52	182	123	108	102	96	339	180	158	149	140	496	238	208	196	185	653
67	59	56	52	185	124	109	103	97	342	182	159	150	141	500	239	209	197	186	656
69	60	56	53	188	126	110	104	98	346	183	160	151	142	503	240	210	198	187	659
70	61	57	54	192	127	111	104	99	349	184	161	152	143	506	241	211	199	188	662
71	62	58	55	195	128	112	105	99	352	185	162	152	144	509	242	212	200	188	666
72	63	59	56	198	129	113	106	100	355	186	163	153	145	512	243	213	200	189	669
73	64	60	57	201	130	114	107	101	358	187	164	154	146	515	245	214	201	190	672
74	65	61	58	204	131	115	108	102	361	188	165	155	147	518	246	215	202	191	675
75	66	62	59	207	132	116	109	103	364	190	166	156	147	522	247	216	203	192	678
77	67	63	59	210	134	117	110	104	368	191	167	157	148	525	248	217	204	193	681
78	68	64	60	214	135	118	111	105	371	192	168	158	149	528	249	218	205	194	684
79	69	65	61	217	136	119	112	106	374	193	169	159	150	531	250	219	206	195	688
80	70	66	62	220	137	120	113	107	377	194	170	160	151	534	251	220	207	196	691
81	71	67	63	223	138	121	114	107	381	195	171	161	152	537	253	221	208	196	694
82	72	68	64	226	139	122	115	108	383	196	172	162	153	540	254	222	209	197	697
83	73	69	65	229	140	123	116	109	386	198	173	163	154	543	255	223	210	198	700
85	74	70	66	232	142	124	117	110	390	199	174	164	155	547	256	224	211	199	703
86	75	71	67	236	143	125	118	111	393	200	175	165	155	550	257	225	212	200	706
87	76	72	67	239	144	126	119	112	396	201	176	166	156	553	258	226	213	201	710
88	77	72	68	242	145	127	120	113	399	202	177	167	157	556	259	227	214	202	713
89	78	73	69	245	146	128	120	114	402	203	178	168	158	559	261	228	215	203	716
90	79	74	70	248	147	129	121	115	405	204	179	168	159	562	262	229	216	204	719
91	80	75	71	251	148	130	122	115	408	206	180	169	160	565	263	230	216	204	723
93	81	76	72	254	150	131	123	116	412	207	181	170	161	569	264	231	217	205	726

Calculated by H & B American Machine Co.

A Five-Day Checklist for Loomfixers

By CARL GOINGS

Monday

Check all shuttles.

1. Be sure that all shuttles are of the same size and weight (C&K looms).
2. Keep the backs of the shuttles square.
3. To prevent damage to the warp and filling, polish the shuttles with fine sandpaper until they are smooth.
4. Finish polishing the shuttles with a rag and a mixture of shellac and wood alcohol.
5. Check the shuttle eyes carefully. The tension pads should be smooth. The slightest groove in a pad will damage the filling.
6. Check the guide posts for grooves or burrs.
7. Be sure the top of the eye is smooth.
8. Tighten the bolts that hold the eye and the quill springs in the shuttle. A loose bolt may cause the reed to be damaged.
9. Check the alignment of the quill springs. If the springs hold the quill out of alignment with the shuttle eye, excess tension will be placed on the shuttle eye and filling breakage will result.
10. Fur the shuttle with the grain of the fur against the yarn. Have the heaviest fur near the shuttle eye. Be careful to keep glue off the edges of the shuttles.

Trim the fur to bevel slightly to the top on the back wall of the shuttle. The fur on the front wall of the shuttle should be beveled from the bottom to the top.

Tuesday

Check the reed and box alignment on all looms.

1. Use a 24-in. and a 12-in. straightedge to align the reed.
2. Align the reed at each end with the lay end or box back.
3. Reeds that will not align should be reported to the supervisor so that the lay ends can be realigned when the warp is out.
4. Be sure that the yielding reed will vibrate.

Wednesday

Check all looms for throwing bad shuttles. One way to check is to hold your thumb on the box top plate or shuttle guide and extend it downward until the moving shuttle tips the end of

your thumb. A bad shuttle will strike the end of your thumb occasionally as it rides too high.

These things will cause a loom to throw a bad shuttle:

1. Binders too tight or binders with worn leather
2. A warped or bent shuttle box
3. A shuttle back that is not square
4. A too-high or too-low warp shed
5. Too much picker-stick power or stroke, or a combination of both
6. The head out of time
7. The picking motion out of time
8. The reed and boxes out of alignment or not square with the race plate
9. Pickers worn excessively, or pickers not parallel
10. Spindle leather worn out, and too much picker-stick stroke
11. A too-tight or too-loose heel strap

Thursday

Check all looms for shuttle boxing by holding the lay end to see if the shuttles are boxing. If a shuttle isn't boxing, check:

1. The picking motion for a loose or worn picking shoe, picking roll, picking-shaft stands, or sweep arm
2. Worn picker, picker sticks cracked or worn, and gummed picker rods
3. The clutch for weak action
4. Binders that are too tight
5. Picker sticks without sufficient power
6. Checkstraps not properly adjusted
7. The warp for being too tight

Friday

Check the shedding motion on all looms.

1. Level and reset all harnesses.
2. Divide the warp shed evenly.
3. Inspect the jack eyes and leader wires for wear.
4. Loosen harness ribs that are too tight.
5. Check the whip roll to see if it is the right height.
6. Set the stop-motion stand to make the drop wires dance.
7. Set the tension on the warp.

To Determine Roll Speed and Production

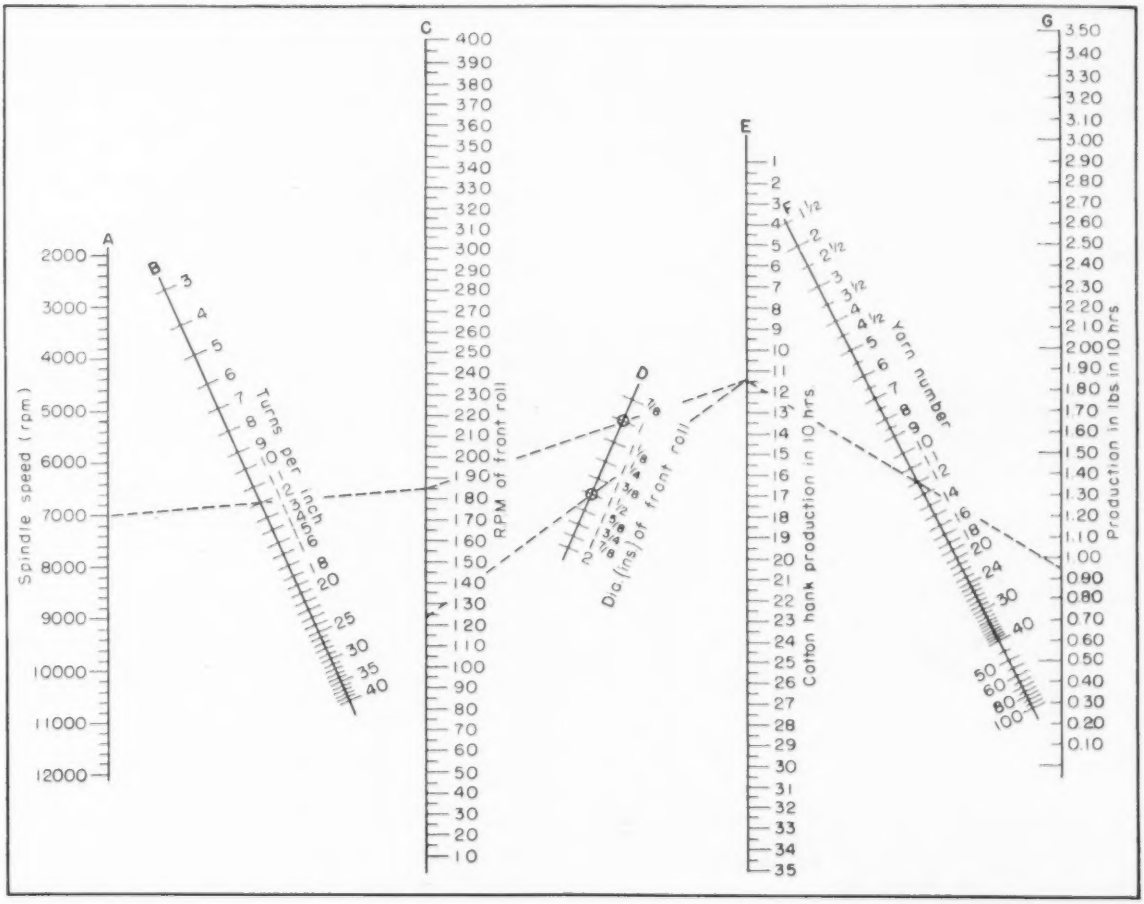
To determine front-roll speed required to insert a desired twist per inch at a given spindle speed, lay a straightedge through the proper points on Scales A and B and read the roll speed on Scale C. The reading obtained is for a 1-in.-dia. roll.

Production in cotton hanks for 10 hrs. is found by a straight line from Scale C to Scale E, passing through the roll diameter on D. If the front-roll speed was found from the first three scales of the chart, the 1-in. roll diameter must be used here.

When a roll diameter is other than 1 in., the roll speed is found by laying a straightedge from E back through the actual roll diameter and reading the roll speed on C.

Production in pounds per spindle in 10 hrs. is found on Scale G by a straight line from the hank production on Scale E through yarn size on F.

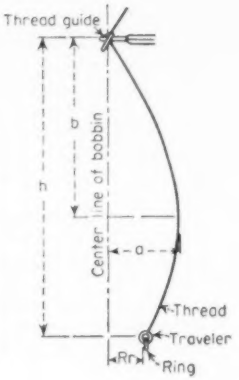
All production figures thus obtained are 100%, and stoppage allowance must be included in finding actual values. Dotted lines illustrate the use of the chart in determining roll speed and production.



Ring Size, Traveler Speed, and Tension

	Ring diameter in inches									
	1 3/4	1 3/4	1 3/4	1 7/8	1 7/8	1 7/8	2	2 3/16	2 3/8	2 3/4
Bobbin dia. in inches	½	½	½	½	½	½	5/8	⅛	7/8	1
Gauge	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3¼	4	4¼
Spindle speed	9,000	10,000	11,000	9,000	10,000	11,000	11,000	10,000	9,000	8,000
"a" in meters	.1621	.1462	.1328	.1621	.1462	.1328	.1328	.1462	.1621	.1814
"h" in inches	10.80	9.73	8.84	10.60	9.58	8.71	8.58	9.25	10.37	11.00
"b" in meters	.273	.247	.224	.270	.243	.221	.218	.235	.264	.277
Wt. of trav. in grams	.07350	.06229	.05243	.06720	.05587	.04702	.04756	.05360	.06086	.05868
Approx. wt. of trav. in grains	1.20	1.00	0.80	1.10	0.85	0.75	0.75	0.85	0.95	0.90
Approx. number of trav.	2/2	1	2/0	1½	1½/0	3/0	3/0	1½/0	½	1/0
Yarn tension in grams	27	27	27	27	27	27	27	27	27	27

Relationship between dimensions of yarn balloon used in table →



A Quick Way To Set the Knowles Head Motion

By JAMES A. EDWARDS

These instructions outline a quick way to set the Knowles head motion on C-4 looms. Settings for W-3 and other looms equipped with the Knowles head are only slightly different.

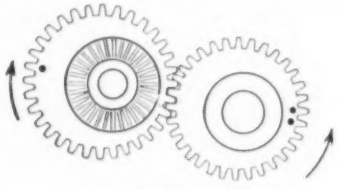
1. Time the Eccentric Gears

The eccentric gears change the dwell of the harnesses and make the work of the box motion easier on various fabrics.

For example:

a. Suppose you have an overstretched yarn that is sized too hard for good weaving. The filling pattern calls for the box motion to skip from the first shuttle box to the third shuttle box.

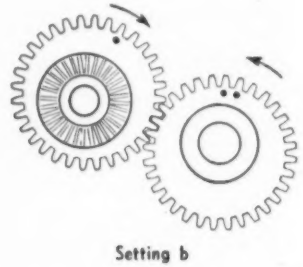
Here you have bad weaving conditions in both the harness motion and box motion. To remedy: Set the eccentric gears for a box-section setting of a fast start and a slow finish, and set the harness section to a medium, fast, medium position.



Setting a

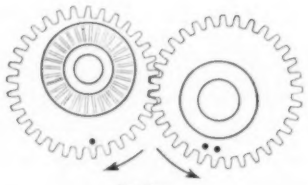
b. If you are weaving a warp of mohair or other fuzzy fiber, use a box-motion setting of medium, slow, medium and a harness-motion setting of fast, medium, slow.

This harness setting will break the warp ends apart rapidly. The box motion, too, will work all right at this combination of speeds.



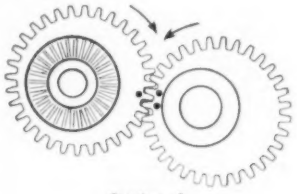
Setting b

c. When fine-denier yarns are used in a warp and a light beat-up, in conjunction with a skip-box pattern, is desired, a box-motion timing of medium, fast, medium is used to give a harness timing of slow, medium, fast.



Setting c

d. The setting usually used for slick, well-slashed yarns is a slow start and quick finish at the box motion and a medium, slow, medium harness-motion setting. This setting is good for average weaving conditions, since little strain is placed on the box motion and the warp yarn.



Setting d

After the desired setting of the eccentric gears has been established for the best weaving conditions for a specific fabric, set the eccentric gears.

The lay position for this setting is 11 ins. from the box back to the inside edge of the breastbeam.

To eliminate the possibility of a shuttle breakout, have all the shuttles in the shuttle box at the head end of the loom when any settings are made on the Knowles head.

After the eccentric gears are set, they will not have to be disturbed until the cloth pattern on the loom is changed.

2. Time the Box Motion

Position the lay with the box back 9½ ins. from the breastbeam.

Slide the top eccentric gear out of mesh with the bevel gear on the upright shaft, and turn the cylinder-gear handwheel clockwise until the first tooth of the box-motion cylinder gear (top and bottom) engages the first tooth of the vibrator gear.

Reposition the top eccentric gear in mesh with the upright-shaft bevel gear.

The box-motion cylinder gears are permanently positioned on the cylinder-gear shafts and are positively timed with each other.

The box motion is now timed properly and should not be changed.

3. Time the Harness Crossing

If useless backtracking of head settings is to be eliminated,

the timing of the harness crossing in relation to the beat-up of the cloth must be established after the box motion has been timed and before any other settings are made.

The harnesses can be timed to cross at any point from back of front center to 2⅛ ins. before front center.

If the harnesses cross at front center, the harness-cylinder gears will be even with the teeth of the box-motion cylinder gear. This setting is unusual and is not used except to lock in picks of filling that have a tendency to kink.

The other extreme setting in harness crossings results when the harnesses cross 2⅛ ins. before front center. At this setting the harness-cylinder gear will be 6½ teeth ahead of the box-motion cylinder gear.

This table shows the settings of the harness cylinder gear to the box-motion cylinder gear at different harness crossings:

Harness-cylinder gear teeth ahead of box-cylinder gear	Distance from reed to fell of cloth (absolutely front center)
6½	2⅛ (ins.)
6	1 15/16
5½	1¾
5	1 9/16
4½	1⅜
4	1 3/16
3½	1
3	13/16
2½	⅝
2	7/16
1½	¼
1	1/16

Each half tooth that the harness cylinder gear is moved in relation to the box-motion cylinder gear represents an average of 1/16 in. There is a slight variation in this figure because of the eccentric-gear movement. Very close calculations can be made on harness crossings if the eccentric gears are set to each of the four timings and the distance of the reed line from the fell of the cloth is recorded at different tooth settings.

Like the eccentric-gear setting, the harness-crossing setting should be predetermined for a certain weave before any attempt is made to set the harness-crossing position.

Here is an example of the setting of a spun-rayon plain weave of average beat-back:

With the box back set 9½ ins. from the breastbeam, disengage the upright-shaft clutch.

Loosen the two setscrews in the top harness-cylinder shaft gear, and set the gear 6½ teeth ahead of the box-motion cylinder gear. Retighten the two setscrews securely.

Turn the cylinder-gear handwheel clockwise until the first tooth of the top harness-cylinder gear engages the vibrator gear. (The pattern chain is on the pattern-chain cylinder).

Loosen the two setscrews in the bottom harness-cylinder gear, move the gear until the first tooth engages the vibrator gear, and retighten the two setscrews securely.

With this setting, the harnesses will cross when the reed line is 2⅛ ins. from the beat of the cloth.

4. Time the Pattern-Chain Cylinder

5. Time the Harness Cylinder Lock Knife

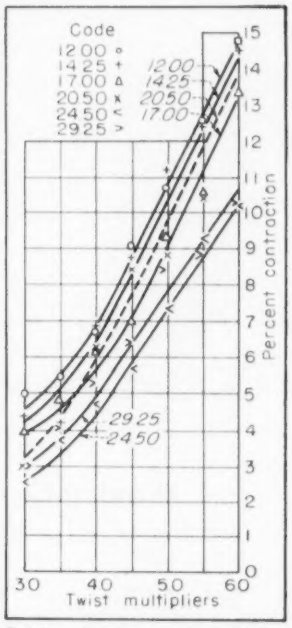
6. Time the Box-Motion Cylinder Lock Knife

Settings 4, 5, and 6 are made in the normal manner. No further adjustments or checking are necessary.

Twist Multipliers for Maximum Skein Strength

Classer's Staple length (ins.)	Twist multiplier
3/4	5.35
25/32	5.15
13/16	5.00
27/32	4.85
7/8	4.70
29/32	4.60
15/16	4.45
31/32	4.35
1	4.25
1 1/32	4.20
1 1/16	4.10
1 3/32	4.05
1 1/8	3.95
1 5/32	3.90
1 3/16	3.85
1 7/32	3.80
1 1/4	3.75
1 9/32	3.70
1 5/16	3.65

The above spinning twist multipliers should result in maximum yarn strength regardless of yarn number. This information is the result of work conducted in the Clemson Laboratory of the Cotton Branch of the Agricultural Marketing Administration.



Relation between twist multiplier and percent contraction.

WOOL

Relation of Wool Quality To Yarn Number for American Wools

Wool quality number	American blood grade	Average diameter (microns)	Average diameter (ins.)	Maximum worsted yarn number	Normal worsted yarn number
80	Fine	19.5	0.00077	80	52 to 70
70	Fine	21.0	0.00083	70	48 to 60
64	Fine	22.0	0.00087	60	40 to 50
60	Half blood	23.5	0.00093	50	30 to 44
58	Half blood	25.0	0.00098	46	28 to 40
56	Three-eighths blood	27.0	0.00106	38	20 to 36
50	Quarter blood	30.5	0.00120	34	18 to 32
48	Quarter blood	33.0	0.00130	30	18 to 28
46	Low-quarter blood	35.0	0.00138	28	18 to 26
44	Common	36.5	0.00144	26	16 to 24
40	Braid	38.5	0.00152	22	15 to 20
36	Braid	39.5	0.00157	18	6 to 16

James H. Kennedy, Jr.

Comparison of Card Wire Numbers

Diameter (ins.)	American No.	Nearest Equivalent No. English	Nearest Equivalent No. French
0.035	20	20	3
0.029	22	22	6
0.023	24	24	8
0.020	25	25	9
0.018	26	26½	10
0.017	27	27	12
0.016	28	28	14
0.015	29	29	16
0.014	30	30	18
0.013	31	31	20
0.0124	32	32	22
0.0114	33	33	24
0.0104	34	34	26
0.0095	35	34½	28
0.0090	36	35	29
0.0085	37	35½	30

Courtesy Davis & Furber Machine Co.

Clean Wool Value

This table shows the dollar value of clean wool with different shrinkages. Values of grease wool given range from 60 to 80¢ per lb. For higher grease wool values up to $1.60 per pound, divide the grease value by 2, from the table determine the clean value at given shrinkage, and then multiply this value by 2.

Example: Find the value of clean wool with a grease-wool value of $1.56 and 40% shrinkage.

$1.56 ÷ 2 = 78¢; $1.30 × 2 = $2.60 per lb.

Grease cost (cents per lb.)	Percent shrinkage											
	20	25	30	35	40	45	50	55	60	65	70	75
60	0.750	0.800	0.858	0.924	1.00	1.09	1.20	1.33	1.50	1.72	2.00	2.40
61	0.764	0.812	0.871	0.940	1.02	1.12	1.22	1.36	1.52	1.75	2.04	2.44
62	0.776	0.827	0.888	0.957	1.04	1.14	1.24	1.38	1.56	1.78	2.07	2.48
63	0.790	0.842	0.902	0.975	1.06	1.16	1.27	1.41	1.58	1.80	2.11	2.52
64	0.801	0.855	0.919	0.990	1.07	1.17	1.28	1.43	1.61	1.84	2.14	2.56
65	0.811	0.869	0.930	1.00	1.08	1.18	1.31	1.45	1.62	1.86	2.17	2.59
66	0.822	0.880	0.941	1.02	1.10	1.20	1.32	1.47	1.65	1.88	2.20	2.62
67	0.839	0.892	0.958	1.03	1.12	1.22	1.34	1.49	1.68	1.91	2.23	2.66
68	0.850	0.908	0.972	1.05	1.14	1.24	1.37	1.52	1.70	1.94	2.27	2.71
69	0.862	0.920	0.986	1.06	1.15	1.26	1.38	1.53	1.72	1.97	2.30	2.75
70	0.874	0.931	0.999	1.08	1.17	1.28	1.40	1.56	1.74	2.00	2.32	2.79
71	0.888	0.948	1.01	1.09	1.18	1.29	1.42	1.58	1.77	2.02	2.37	2.82
72	0.900	0.960	1.03	1.11	1.20	1.32	1.44	1.60	1.80	2.06	2.40	2.88
73	0.914	0.975	1.04	1.13	1.22	1.33	1.47	1.63	1.82	2.09	2.43	2.91
74	0.925	0.988	1.06	1.14	1.23	1.35	1.48	1.65	1.85	2.12	2.47	2.95
75	0.940	1.00	1.07	1.16	1.25	1.37	1.50	1.67	1.88	2.14	2.50	2.99
76	0.950	1.02	1.08	1.17	1.27	1.38	1.52	1.70	1.90	2.17	2.53	3.02
77	0.964	1.03	1.10	1.18	1.28	1.40	1.54	1.72	1.93	2.20	2.57	3.07
78	0.975	1.04	1.12	1.20	1.30	1.42	1.57	1.73	1.96	2.23	2.60	3.10
79	0.989	1.06	1.13	1.22	1.32	1.43	1.58	1.77	1.98	2.26	2.62	3.14
80	1.00	1.07	1.14	1.23	1.33	1.47	1.60	1.78	2.00	2.28	2.67	3.18

Production in Woolen Spinning

This formula and the table based on it give the pounds per spindle for continuous running. No allowance has been made for stoppages, doffing, cleaning, oiling, etc.

$$\frac{(A)\ (\pi)\ (B)\ (C)}{(1600)\ (36)\ (N)} = \text{lbs. per sp.}$$

where

A = front-roll diameter (ins.)
B = front-roll speed (rpm.)
C = running time (mins.)
N = yarn number (run)

Yarn number	Grade	Twist (tpi.)	Spindle speed (rpm.)	Lbs. per 200-sp.ft. per hr.
1/5 1/2	58	3 1/2	3,850	96.0
1/8	62	3.3	4,400	85.0
1/15	62	6.25	6,000	53.7
1/17	62	10 1/2	7,500	22.8
1/18	5 B.A.	10	6,000	17.9
1/20	Knitting	6 1/2	5,300	22.2
1/20	Mohair	16	6,200	8.1
1/24	Mohair	16	5,500	7.8
1/28	58 M.V.	15 1/2	7,000	6.3
1/28	58	15 1/2	7,500	9.5
1/30	62	15 1/2	7,500	8.8
1/30	62	12	7,200	10.5
1/31 1/2	Mohair	17	6,700	6.75
1/31 1/2	62	12.4	7,200	11.00
1/32	62	13.9	6,000	7.40
1/32	58	15	6,500	7.50
1/36	62	19	7,200	5.82
1/47	62	19	7,500	4.67
1/50	64	19	7,500	4.40

Courtesy Whitin Machine Works

Woolen-Card Production

Production (pounds per hour) of woolen cards can be calculated as follows:

$$\frac{(\pi)\ (D)\ (R)\ (E)\ (W)\ (60)}{(7000)\ (50)\ (36)}$$

where

D = drum diameter
R = drum rpm.
E = number of good ends
W = weight in grains per 50-yd. reeling

The simplified version is

$$\text{Production (lbs. per hr.)} = \frac{(\pi)\ (D)\ (R)\ (E)\ (W)}{210{,}000}$$

Courtesy Davis & Furber Machine Co.

Thickness of Card Gauges

Wire gauge (Birmingham)	Thickness (ins.)	Thickness (mm.)
20	0.035	0.889
22	0.028	0.711
24	0.022	0.559
26	0.018	0.457
28	0.014	0.356
30	0.012	0.305
32	0.009	0.229
34	0.007	0.178
36	0.005	0.127

Courtesy Davis & Furber Machine Co.

Carding Fine Wool Noils

Breaker

Breast	Garnett wire
Breast workers and strippers	Garnett wire
Cylinder	110/10
Workers	115/10
Doffer	115/10
Strippers	90/9
Fancy	40/4 28 wire

Breaker-card settings

	Gauge
Breast workers and strippers to breast	28
Workers to cylinder	30
Strippers to cylinder	32
Doffer to cylinder	32
Strippers to workers	to touch lightly

Intermediate

Feed rolls and lickerin	Garnett wire
Tumbler	80/8
Cylinder	130/11
Doffer and workers	135/11
Strippers	90/9
Fancy	40/5 29 wire

Intermediate-card settings

	Gauge
Lickerin to feed rolls	28
Tumbler to lickerin	30
Tumbler to cylinder	32
Workers to cylinder	32
Strippers to cylinder	34
Doffer to cylinder	34
Strippers to workers	to touch lightly

Finisher

Feed rolls and lickerin	Garnett wire
Cylinder	135/11
Tumbler	90/9
Cylinder	135/11
Tape doffer	140/13
Workers	140/2
Strippers	100/10
Fancy	40/5 30 wire

Finisher card

	Gauge
Feed rolls to lickerin	30
Lickerin to tumbler	30
Tumbler to cylinder	34
Workers to cylinder	34
Strippers to cylinder	34
Doffer to cylinder	35
Strippers to workers	to touch lightly

Twister Production

The stock is really the limiting factor in determining twister production. But you can get a good idea of 100% production (except for novelty or fancy yarns) from this formula.

$$\frac{(A)\ (B)\ (C)\ (F)\ (60)}{(D)\ (E)\ (36)} = \text{yds. per hr. per spindle}$$

where

A = rpm. of drum
B = teeth in drum gear
C = teeth in inside change gear
D = teeth in outside change gear
E = teeth in gear on long (feed) roll
F = feed-roll circumference (ins.)
1 7/16-in. roll = 4.51 ins. circumference
1 13/16-in. roll = 5.69 ins. circumference

Courtesy Davis & Furber Machine Co.

Comparative Grades of Wool

United States									Foreign				
Domestic fleeces	Territory		Pulled Wools – Eastern										
	Territory wools	Oregon wools	April to May	May to August	August to November		December to March		Quality number	Cape, Australia and New Zealand	South America	Worsted yarn number	Woolen yarn number
			Clothing	Clothing	Clothing	Combing	Clothing	Combing					
Delaine	Fine	Eastern F & F Med.					AAA AA	AA	70s 64s	Merino	Merino	60s	6/7
Half blood	Half blood	Valley No. 1	A Lambs	L B	L A		A		60s		Prima	60s	5
							A Super	A	58s	Comeback			4
3/8s blood	3/8s blood		B Lambs	B Super	L B		L B	B	56s	Half Bred	Ones	36/40s	3½
Quarter blood	Quarter blood	Valley No. 2		B Stain		B Comb.	B	M	50s 48s		Twos	30s	3 2½
Low 1/4 blood	Low 1/4 blood	Valley No. 3	C Lambs	C		L	C	L	46s	Quarter Bred	Threes	26s	2
Common braid	Common and braid								44s 40s 36s	Lincoln and Cotswold	Fours Fives Sixes	16s	1 3/4

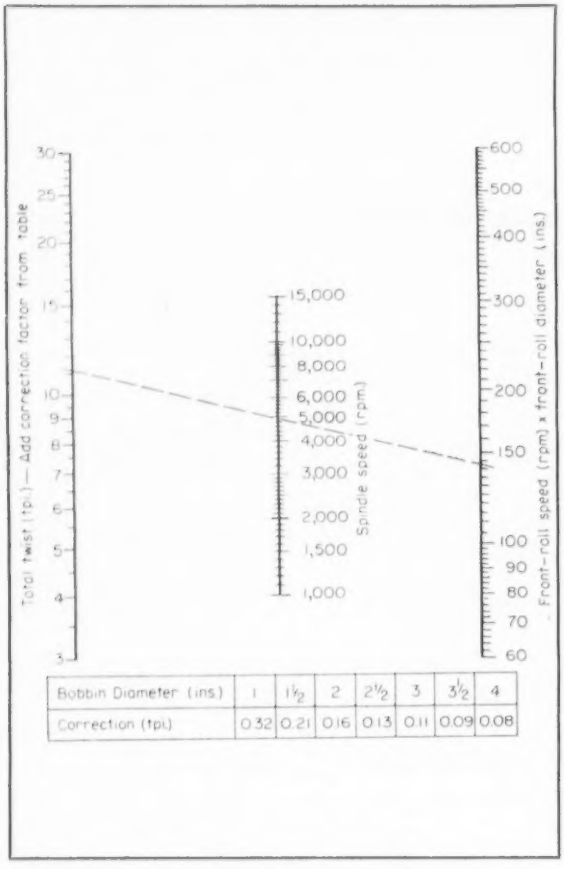
Production in Worsted Spinning

Based on the BW worsted spinning frame, this table gives a good indication of the productions possible for yarn numbers from 1/5½s to 1/50s.

Rpm. of front roll	Yarn number (run)																										
	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4¼	4½	4¾	5	5¼	5½	5¾	6	6¼	6½	6¾	7	7¼	7½	7¾	8
100	4.09	3.27	2.62	2.34	2.04	1.82	1.64	1.48	1.36	1.25	1.17	1.09	1.02	.962	.908	.861	.818	.778	.743	.711	.681	.654	.629	.606	.570	.564	.545	.528	.511
105	4.29	3.43	2.75	2.45	2.14	1.91	1.72	1.55	1.43	1.31	1.23	1.14	1.07	1.01	.953	.904	.859	.816	.780	.747	.715	.686	.660	.636	.599	.592	.572	.554	.537
110	4.50	3.60	2.88	2.57	2.24	2.00	1.80	1.63	1.50	1.38	1.29	1.20	1.12	1.06	.998	.947	.899	.856	.817	.782	.749	.719	.692	.667	.627	.620	.599	.581	.562
115	4.70	3.76	3.01	2.69	2.35	2.09	1.89	1.70	1.56	1.44	1.35	1.25	1.17	1.11	1.04	.990	.940	.894	.854	.818	.783	.752	.723	.697	.656	.649	.627	.607	.588
120	4.91	3.92	3.14	2.81	2.45	2.18	1.97	1.78	1.63	1.50	1.40	1.31	1.22	1.15	1.09	1.03	.982	.933	.891	.853	.817	.785	.754	.727	.684	.677	.654	.634	.613
125	5.11	4.09	3.28	2.92	2.55	2.28	2.06	1.85	1.70	1.56	1.46	1.36	1.28	1.20	1.13	1.08	1.02	.972	.928	.889	.851	.818	.786	.758	.713	.705	.681	.660	.639
130	5.31	4.25	3.41	3.04	2.65	2.37	2.13	1.92	1.77	1.62	1.52	1.42	1.33	1.25	1.18	1.12	1.06	1.01	.966	.924	.885	.850	.818	.788	.741	.733	.708	.686	.664
135	5.52	4.41	3.54	3.16	2.75	2.46	2.21	1.99	1.84	1.69	1.58	1.47	1.38	1.30	1.23	1.16	1.10	1.05	1.00	.959	.919	.883	.849	.818	.770	.761	.735	.713	.690
140	5.73	4.57	3.67	3.28	2.86	2.55	2.30	2.07	1.90	1.73	1.64	1.53	1.43	1.35	1.27	1.21	1.14	1.09	1.04	.995	.953	.916	.881	.848	.798	.790	.763	.739	.715
145	5.93	4.74	3.80	3.39	2.96	2.64	2.38	2.15	1.97	1.81	1.70	1.58	1.48	1.39	1.32	1.25	1.18	1.13	1.08	1.03	.987	.948	.912	.879	.826	.818	.790	.766	.740
150	6.13	4.91	3.93	3.51	3.06	2.73	2.46	2.22	2.04	1.88	1.76	1.64	1.53	1.44	1.36	1.29	1.23	1.17	1.11	1.07	1.02	.981	.943	.909	.855	.846	.817	.792	.767
155	6.34	5.07	4.06	3.63	3.16	2.82	2.54	2.29	2.11	1.94	1.81	1.69	1.58	1.49	1.41	1.33	1.27	1.21	1.15	1.10	1.06	1.01	.975	.939	.883	.874	.845	.818	.792
160	6.54	5.23	4.19	3.74	3.26	2.91	2.62	2.37	2.18	2.00	1.87	1.74	1.63	1.54	1.45	1.38	1.30	1.24	1.19	1.14	1.09	1.05	1.01	.970	.912	.902	.872	.845	.818
165	6.75	5.40	4.32	3.86	3.36	3.00	2.71	2.44	2.24	2.06	1.93	1.80	1.68	1.59	1.50	1.42	1.35	1.29	1.23	1.17	1.12	1.08	1.04	1.00	.941	.931	.899	.871	.843
170	6.95	5.56	4.45	3.98	3.46	3.09	2.79	2.52	2.31	2.12	1.99	1.85	1.73	1.64	1.54	1.46	1.39	1.32	1.26	1.21	1.15	1.11	1.07	1.03	.969	.959	.926	.898	.869
175	7.16	5.72	4.59	4.09	3.57	3.18	2.87	2.59	2.38	2.18	2.05	1.91	1.79	1.68	1.59	1.51	1.43	1.36	1.31	1.24	1.19	1.14	1.10	1.06	.997	.987	.953	.924	.894
180	7.36	5.88	4.72	4.21	3.67	3.28	2.95	2.66	2.45	2.25	2.11	1.96	1.84	1.73	1.63	1.55	1.47	1.40	1.35	1.28	1.22	1.18	1.13	1.09	1.03	1.01	.981	.950	.919
185	7.56	6.05	4.85	4.33	3.77	3.36	3.03	2.74	2.52	2.31	2.16	2.02	1.89	1.78	1.68	1.59	1.51	1.44	1.39	1.32	1.25	1.21	1.16	1.12	1.05	1.04	1.01	.977	.945
190	7.77	6.21	4.98	4.45	3.87	3.46	3.12	2.81	2.58	2.38	2.22	2.07	1.94	1.83	1.73	1.64	1.55	1.48	1.42	1.35	1.29	1.24	1.20	1.15	1.08	1.07	1.03	1.00	.970
195	7.97	6.38	5.11	4.56	3.98	3.55	3.20	2.89	2.65	2.44	2.28	2.12	1.99	1.88	1.77	1.68	1.59	1.52	1.46	1.39	1.33	1.27	1.23	1.18	1.11	1.10	1.06	1.03	.996
200	8.18	6.54	5.24	4.68	4.08	3.64	3.28	2.96	2.72	2.50	2.34	2.18	2.04	1.92	1.82	1.72	1.64	1.56	1.49	1.42	1.36	1.30	1.26	1.21	1.14	1.13	1.09	1.06	1.02

Courtesy Whitin Machine Works

Spindle and Front-Roll Speeds For Various Worsted-Yarn Twists



Bobbin Diameter (ins.)	1	1½	2	2½	3	3½	4
Correction (tpi.)	0.32	0.21	0.16	0.13	0.11	0.09	0.08

With this nomograph developed by Morris C. Bishop you can determine spindle speed for known twist and front-roll speed, or you can get front-roll speed if you know twist and spindle speed.

No long calculations are necessary. Locate turns per inch and add the correction factor based on your bobbin diameter. Then draw a straight line from turns per inch to spindle speed and extend the line to the front-roll-speed column.

The right-hand column gives the product of front-roll diameter (ins.) and front-roll speed (rpm.). No π is involved because the figures already take the necessary constants into account. So all you have to do is divide the value where your line intersects by front-roll diameter to get front-roll speed.

To allow for contraction, multiply front-roll speed by the contraction and add this amount to the front-roll speed previously determined.

EXAMPLE. Given: 11 tpi., 5,000 rpm. spindle speed. Front-roll dia. 4 ins. Mean bobbin diameter 1½ ins. Contraction 2%. Find: rpm. of front roll.

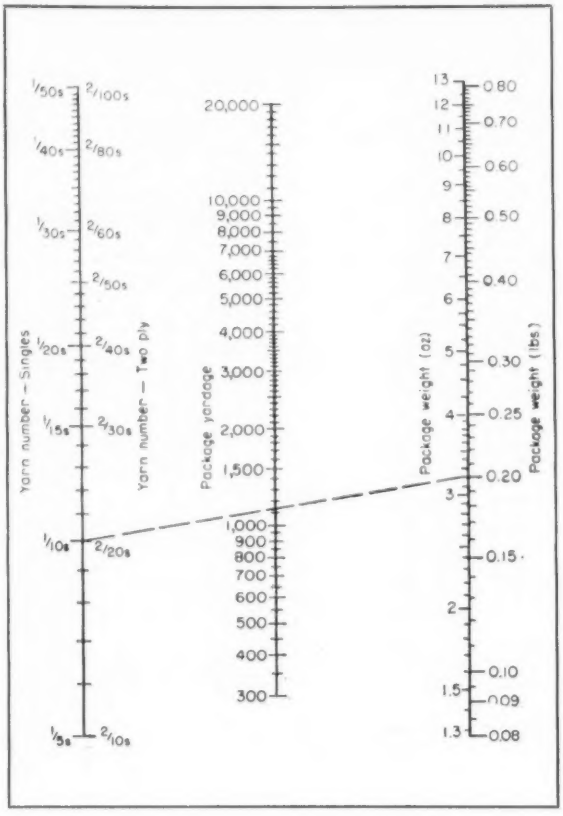
The correction table lists 0.21 as the factor to add to tpi.; so 11.21 is located in the left-hand column. A line from 11.21 through 5,000 in the middle column intersects the right-hand column at 143.

Dividing 143 by 4 (front-roll dia.) gives 35.75. Multiplying 35.75 by 2% (contraction) gives 0.70, and adding this value to 35.75 gives the final answer, 36.5 rpm., as the front-roll speed.

If spindle speed is the unknown factor, the process outlined above can be applied in reverse.

If twist is the unknown factor, subtract correction factors from values shown in the left-hand column.

Package Weight and Yardage For Various Worsted-Yarn Numbers



This nomograph by Morris C. Bishop is very handy for planning and balancing production in worsted spinning and winding. In addition to showing the relation between yarn number, yardage, and package weight, the nomograph also shows the relationship of ounce to pounds without any calculation.

EXAMPLE. If a doff of 100 bobbins of 2/20s weighs 20 lbs. net (yarn only, not the bobbins), average bobbin weight is 0.2 lbs. or 3.2 oz. A line from 2/20s on the left-hand scale to 0.20 on the right-hand scale intersects the middle scale at 1,120, the average bobbin yardage.

Equivalent Ounce Top, Dram, Grain, And Hank Roving

This table, suggested by John C. Lowe, is convenient for changing from one method of sizing to another in worsted drawing. It gives the equivalents in each of the four methods of designating the size of the end.

Top	Dram roving	Grains	Hank roving
5 Yds.	40 Yds.	40 Yds.	560 Yds.
2	256	7,000	0.714
2¼	288	7,875	0.635
2½	320	8,750	0.571
2¾	352	9,625	0.520
3	384	10,500	0.466
3½	448	12,250	0.408
4	512	14,000	0.357
4½	576	15,750	0.318
5	640	17,500	0.286

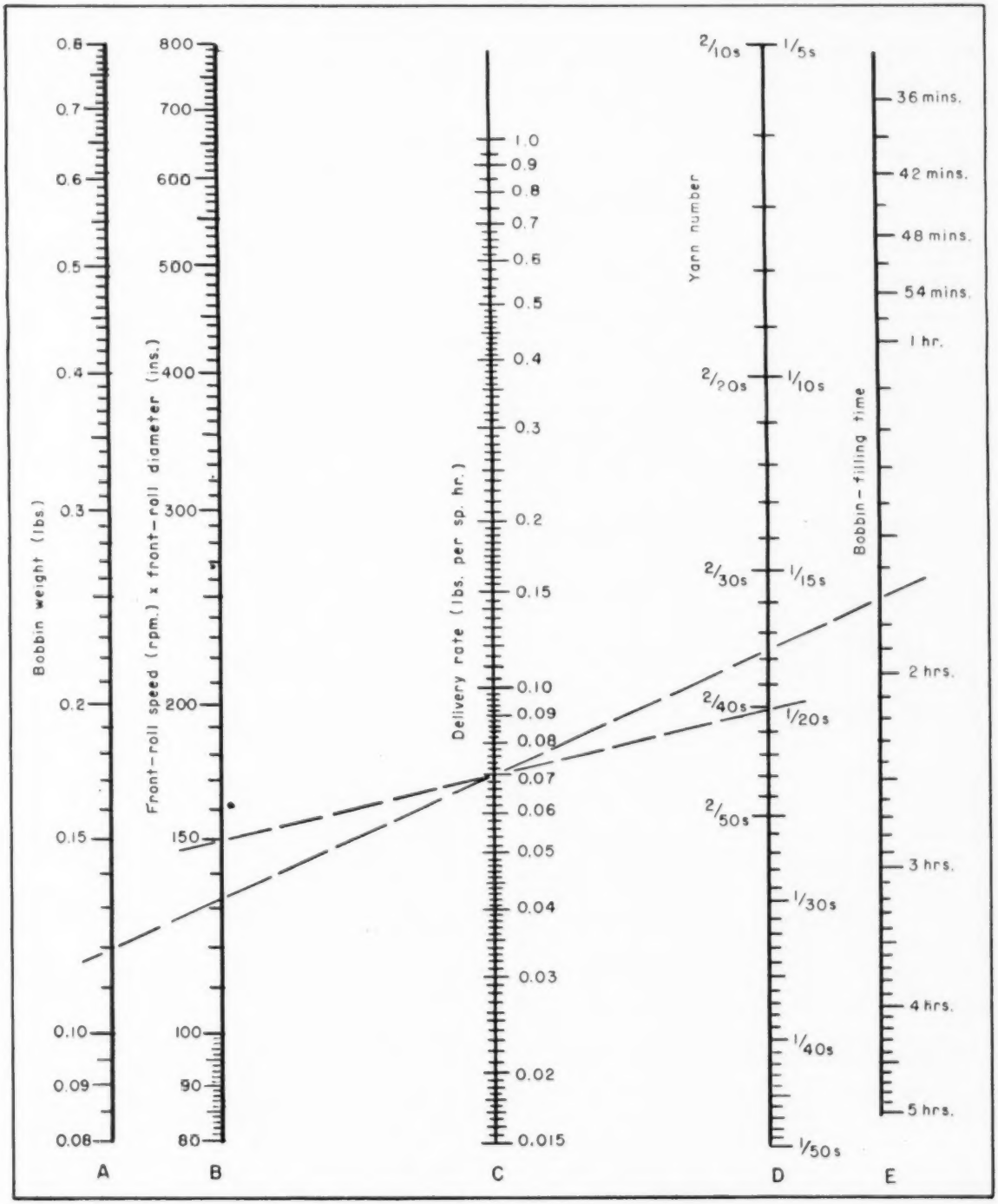
Delivery Rate and Bobbin-Filling Time for Worsted Yarns

With this nomograph by Morris C. Bishop you can determine bobbin-filling time without any calculations. The final answer is gotten after you determine, in an intermediate step, the delivery rate in pounds per spindle hour.

EXAMPLE. Locate yarn number (1/20s) in Column D. Multiply front-roll speed (rpm.) by front-roll diameter (ins.) and locate this figure in Column B. In this case, 37.5 rpm. x 4 ins. gives a value of 150. Draw a line from the point in Column D to the point in Column B, and note where the line crosses Column C.

This value in Column C gives the delivery rate in pounds per spindle hour (0.07 in the example). Locate average bobbin weight (lbs.) in Column A. In this case 100 bobbins have a net weight of 12 lbs., so average bobbin weight is 0.12 lbs.

Draw a second line from the point in Column A, through the point in Column C, to Column E. The intersection point in Column E gives the bobbin-filling time, 1.7 hrs. (1 hr. 42 mins.) in the example.



Effect of Twist on Spun-Rayon Yarns

The data for this chart are the result of tests by Frank Holden, a full account of which appeared in TEXTILE WORLD.

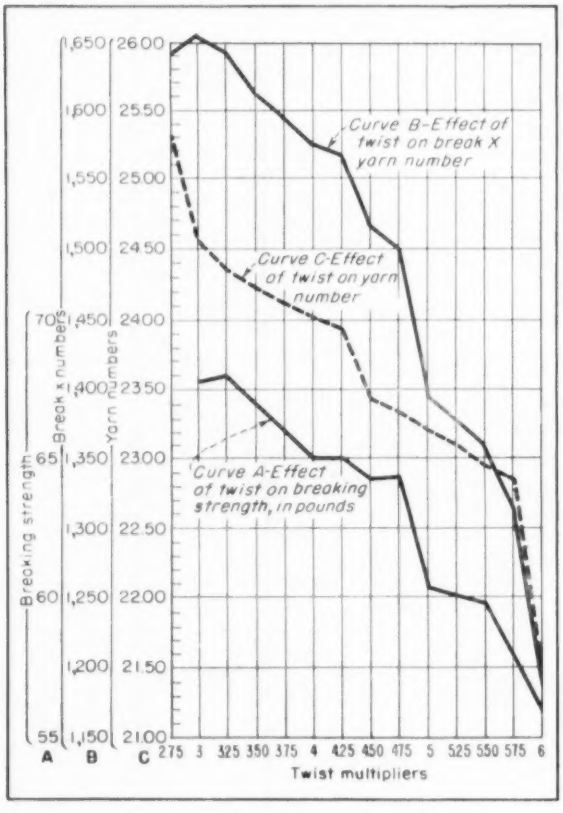
The chart shows the effect of twist on the qualities of a 24s yarn spun from 1½-in., 1.5-den., cut viscose-rayon fiber, specially made for spinning on the cotton-yarn system.

While the chart represents only one series of tests, it is typical. The maximum strength is obtained with the lowest twist multipliers used, and a smooth curve down through Plot A or Plot B is much like that for cotton yarns twisted beyond the point of maximum strength.

If the contraction plot, C, is considered a straight line, as seems likely, it will be found that it follows very closely the contraction for single cotton yarns.

The following table shows the important details of the organization used:

Waste opener	—
Double opener—porcupine and two blades	16 oz.
Finisher	—
Card—regular settings, slow flats	60 grs.
Drawing—two operations, bone guides, 320 rpm., 1⅝, 1¾, 1⅞ settings	60 grs.
Slubber—.65 tpi., 1⅝, 1¾ settings	.75 hk.
Intermediate—.707 tpi. (as slubber)	2.20 hk.
Spinning—double roving, lightweight, leather over wood middle roll	24s



Fibers in Cross Section of Yarn

This formula may be used for determining the number of fibers in the cross section of a spun-rayon yarn:

$$\text{fibers per cross section} = \frac{53.15 \times \text{sum of}\left(\frac{\text{percent of each denier}}{\text{each denier}}\right)}{\text{yarn number (to be spun)}}$$

Effect of Regain on Viscose-Yarn Strength

This chart is plotted from an average of figures given by Prof. G. B. Haven of MIT and shows the percentage decrease in strength of viscose yarns as the regain is increased. It must be kept in mind that the chart is for viscose yarns only.

The strength of the yarns at 0% regain is taken as 100%. As few mills have this figure, they may use a conversion equation as follows:

$$\frac{\text{present strength}}{\text{present \% (at present regain)}} = \frac{\text{new strength}}{\text{new \% (at new regain)}}$$

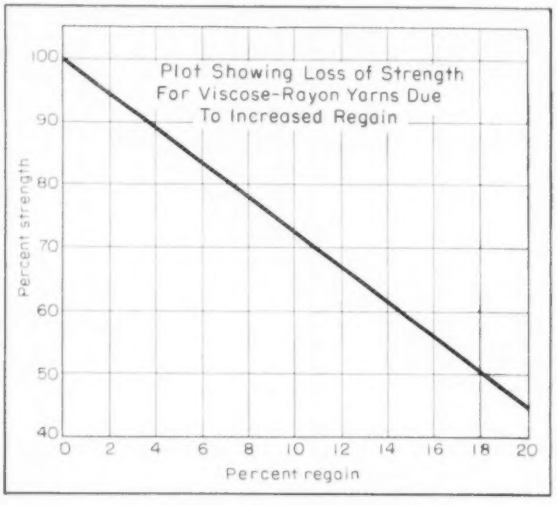
Or,

$$\frac{\text{present strength} \times \text{new \% (at new regain)}}{\text{present \% (at present regain)}} = \text{new strength}$$

Example: If viscose is breaking at 50 lbs. for 4% regain, what should it break at for 6% regain?

The percent strength for 4% regain is 89%; for 6% regain it is 83.5%. Then we have:

$$\frac{50 \times .835}{.89} = 46.9 \text{ new strength}$$



What Is Denier?

TO MILL MEN the term "denier" is a familiar word, but to many it has little meaning. By definition, denier is the weight in grams of 9,000 meters of yarn.

1. Denier is a unit of measurement that reflects weight per unit length.
2. Denier denotes weight in grams for 9,000 meters of length.
3. Denier denotes the coarseness or fineness of a yarn.
4. Denier relates to the size or the diameter of the yarn.
5. The lower the denier, the finer the yarn.

The term denier came into use centuries ago, when merchants used a legal coin called a denier as a weight to determine the size of the silk yarn bought or sold.

Practical Applications

The basic unit of the denier system is: No. 1 denier equals 4,464,528 yds. per lb.

By contrast:

No. 1 singles equals 840 yds. per lb. (cotton system)
No. 1 run equals 1,600 yds. per lb. (woolen system)
No. 1 singles equals 560 yds. per lb. (worsted system)

This comparison illustrates that one denier is extremely fine—so fine that no continuous-filament yarn is made that fine. Generally, finer yarns such as 60s or 80s (cotton system) are spun from 1.0-den. rayon staple.

When is "denier" used?

Today, man-made fibers are produced in the forms of filament

yarn, staple, tow, or all three forms. Irrespective of the form, the size is referred to as denier.

For example:

- No. 1 denier staple is an extremely fine individual fiber.
- 1,100 denier is a continuous-filament yarn that is rather coarse and is used for tire-cord fabric.
- 190,000 total denier is a thick strand of untwisted continuous filaments that is easily converted to top.

The yards per pound would be:

1.0 den. equals 4,464,528 yds.
1,100 den. equals 4,059 yds.
190,000 den. equals 235 yds.

Yarns such as 1,100, 1,650, and 2,200 den. are very coarse and are used principally for tire-cord fabrics. Yarns such as 30 or 50 den. are very fine and are usually woven or knitted into sheer fabrics.

How Is Denier Determined?

If denier is the weight in grams of 9,000 meters of yarn, a yarn of this length weighing 100 gms. is a 100-den. yarn. A yarn of this same length but weighing 1,100 gms. is a 1,100-den. yarn, much coarser than a 100-den. yarn.

The number of filaments in a yarn does not determine or influence the denier of the yarn. Yarns of the same denier may be spun with different numbers of filaments, that is, a 100-den. yarn may contain 40 filaments (100/40) or 60 filaments (100/60) or 100 filaments (100/100). Each rayon producer decides how many filaments a certain yarn is to contain.

Denier per filament (that is of each filament contained in a yarn) is easily determined by dividing the denier of the yarn by the number of filaments, as:

100/40 equals 2.5 den. per filament
100/60 equals 1.6 den. per filament
100/100 equals 1.0 den. per filament

Condensed from an article by Caroline Boyer in TEXTILE WORLD

Synthetics on Woolen Cards

Tables compiled by Robert A. Smith, Textile Research Dept., American Viscose Corp.

Card Settings for Synthetics On a Davis & Furber Woolen Finisher

	Diameter (ins.)	Circum. on wire (ins.)	Wire number	Foundation	Gauge setting	Speed (rpm.)	Speed (ins. per min.)
Feed rolls	3	9.42	Garnett No. 2LK	8 threads per in.	28	3.75	35.32
Lickerin	7	23.56	Garnett No. 3LK	10 threads per in.	30	150	3,534.00
Tumbler	10	34.55	Ang. 32s	5-ply rubber face	30	215	7,428.25
Cylinder	60	190.85	30/34s	6-ply felt face	–	75	14,313.75
1st stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
1st worker	8	27.49	30/34s	6-ply felt face	28	6.8	185.55
2nd stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
2nd worker	8	27.49	30/34s	6-ply felt face	28	6.3	171.81
3rd stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
3rd worker	8	27.49	30/34s	6-ply felt face	28	6	164.94
4th stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
4th worker	8	27.49	30/34s	6-ply felt face	28	5.9	161.50
5th stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
5th worker	8	27.49	30/34s	6-ply felt face	28	5.8	158.06
6th stripper	2 13/16	12.89	30s	6-ply felt face	28	360	4,640.40
6th worker	8	27.49	30/34s	6-ply felt face	28	5.6	154.63
7th stripper	2 13/16	12.89	30s	6-ply felt face	28	375	4,833.75
7th worker	8	27.49	30/34s	6-ply felt face	28	7	192.43
Fancy	9 7/8	38.87	30s	Leather	–	510	19,823.70
Fancy stripper	2 13/16	12.89	30s	D. C. Flexifort	24	515	6,638.35
Doffer	36	118.59	32/36s	6-ply felt face	28	6	711.54
Dickey	2 3/16	12.89	30s	D. C. Flexifort	34	10	128.90
Doffer comb	.....	.....	.....	.....	30	1,165	.....
			Tape condenser				
Dividing rolls	6 7/16	20.22	.....	.....	24	31	626.82
Aprons	.....	24.50	.....	.....	24	36.7	900.00
Eccentric	.....	.....	.....	.....	–	320	.....
Spool drums	6 3/4	21.20	.....	.....	–	45.3	960.00

Card Settings for Synthetics On a Whitin Woolen Finisher Card

	Diameter (ins.)	Circum. on wire (ins.)	Wire number	Foundation	Gauge setting	Speed (rpm.)	Speed (ins. per min.)
Feed rolls	2 5/8	9.42	Metallic	5 threads-No. 526U11	28	2.8	25.91
Lickerin	4 1/2	16.10	15/24s	Leather	30	210	3,370.30
Back fancy	3	15.70	28s	Leather	28	410	643.70
Tumbler	9 1/16	31.43	32s	5-ply rubber face	30	5,160.8	5,028.80
Cylinder	60	190.19	35s	Flexifort	–	71	13,503.49
1st stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
1st worker	7	24.74	35s	Flexifort	30	6.5	160.81
2nd stripper	2 3/4	11.38	35s	Flexifort	30	4,220.2	4,779.60
2nd worker	7	24.74	35s	Flexifort	30	6.3	154.63
3rd stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
3rd worker	7	24.74	35s	Flexifort	30	6.1	151.53
4th stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
4th worker	7	24.74	35s	Flexifort	30	6	148.44
5th stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
5th worker	7	24.74	35s	Flexifort	30	5.9	145.35
6th stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
6th worker	7	24.74	35s	Flexifort	30	5.8	142.26
7th stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
7th worker	7	24.74	35s	Flexifort	30	5.6	139.16
8th stripper	2 3/4	11.38	35s	Flexifort	30	420	4,779.60
8th worker	7	24.74	35s	Flexifort	30	5.3	154.63
Fancy stripper	1 7/8	9.01	30s	6-ply cotton	28	590	5,327.70
Fancy	9 3/4	38.48	33s	Low-bend leather (3R, 3T, 3N.)	–	490	18,855.20
Fancy stripper	2 15/16	12.38	30s	6-ply cotton	26	590	7,304.20
Doffer	36	115.82	35s	Flexifort	30	5.8	665.92
Dickey	3 3/8	13.74	30s	6-ply cotton	34	5	68.70
Doffer comb	.....	.....	.....	.....	30	1,350	.....
			Tape condensers				
Dividing rolls	6.50	20.42	.....	.....	28	30	612.60
Aprons	.....	27.25	.....	.....	24	32.3	780.00
Eccentric	.....	.....	.....	.....	...	290	.....
Spool drum	6.50	20.42	.....	.....	...	38	780.00

Card Settings for Synthetics On a Whitin Woolen Breaker Card

	Diameter (ins.)	Circum. on wire (ins.)	Wire number	Foundation	Gauge setting	Speed (rpm.)	Speed (ins. per min.)
Feed rolls	2 5/8	9.87	Metallic	4 threads interlocking	28	1	9.87
Lickerin	9 7/16	31.42	Metallic	4 threads interlocking	28	25	785.50
Comp roll	4 1/4	14.92	Metallic	10 threads	24	25	373.00
Breast cylinder	25	79.32	Metallic	12 threads	28	51	4,045.32
1st stripper	3 1/8	10.60	Metallic	12 threads	28	128	1,356.80
1st worker	6 3/8	20.81	Metallic	12 threads	28	7.5	156.07
2nd stripper	3 1/8	10.60	Metallic	12 threads	28	128	1,356.80
2nd worker	6 3/8	20.81	Metallic	12 threads	28	7.5	156.07
3rd stripper	3 1/8	10.60	Metallic	12 threads	28	128	1,356.80
3rd worker	6 3/8	20.81	Metallic	12 threads	28	7.5	156.07
Tumbler	14	46.72	24/30s	D. C. 6-ply Flexifort	30	112	5,232.64
Cylinder	60	191.21	26/30s	D. C. 6-ply Flexifort	–	72	13,767.12
1st stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	360	4,100.40
1st worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	7.5	209.10
2nd stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	375	4,271.25
2nd worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	7.1	198.64
3rd stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	360	4,100.40
3rd worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	7	195.16
4th stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	360	4,100.40
4th worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	6.8	188.90
5th stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	360	4,100.40
5th worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	6	167.28
6th stripper	2 3/4	11.39	26/30s	D. C. 6-ply Flexifort	28	360	4,100.40
6th worker	8	27.88	26/30s	D. C. 6-ply Flexifort	28	8	223.04
Fancy stripper	1 7/8	9.03	26/30s	D. C. 6-ply Flexifort	28	620	5,598.60
Fancy	9 3/4	38.48	26/28s	Low-bend leather (pressed point 3R, 3T, 3N.)	–	520	20,009.60
Fancy stripper	2 3/4	12.17	30s	6-ply cotton	24	620	7,545.40
Doffer	36	115.84	26/30s	D. C. 6-ply Flexifort	28	7.8	820.26
Dickey	3 3/8	14.53	30s	6-ply cotton	34	7.8	126.00
Doffer comb	–	–	–	–	30	1,450	–

Card Settings for Synthetics On a Whitin Woolen Intermediate Card

	Diameter (ins.)	Circum. on wire (ins.)	Wire number	Foundation	Gauge setting	Speed (rpm.)	Speed (ins. per min.)
Feed rolls	2 5/8	9.42	5 thread	No. 526U11	28	2.75	25.90
Lickerin	4 1/2	16.10	15/24s	Leather	30	2,240	3,864.00
Back fancy	3	15.70	28s	Leather	28	495	7,771.50
Tumbler	9 1/16	31.43	28s	Flexifort	30	175	5,500.25
Cylinder	60	190.19	30/34s	D. C. Flexifort	–	72	13,693.68
1st stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
1st worker	7	24.74	30/34s	D. C. Flexifort	30	6.8	166.99
2nd stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
2nd worker	7	24.74	30/34s	D. C. Flexifort	30	6.3	154.62
3rd stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
3rd worker	7	24.74	30/34s	D. C. Flexifort	30	5.9	145.34
4th stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
4th worker	7	24.78	30/34s	D. C. Flexifort	30	5.3	129.88
5th stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
5th worker	7	24.78	30/34s	D. C. Flexifort	30	5.1	126.79
6th stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
6th worker	7	24.78	30/34s	D. C. Flexifort	30	5	123.70
7th stripper	2 3/4	11.38	30/34s	D. C. Flexifort	30	430	4,993.40
7th worker	7	24.78	30/34s	D. C. Flexifort	30	4.9	120.60
Fancy stripper	1 7/8	9.03	30s	6-ply cotton	28	600	5,418.00
Fancy	9 3/4	38.48	28/30s	Low-bend leather (pressed 3R, 3T, 3N.)	–	510	19,624.80
Fancy stripper	2 3/4	11.78	30s	6-ply cotton	24	600	7,068.00
Doffer	36	115.82	30/34s	D. C. Flexifort	28	6	694.92
Dickey	3 3/8	13.74	30s	6-ply cotton	34	8	109.92
Doffer comb	.....	.....	.....	.....	30	1,410	.....

Running Rayon Staple On Cotton System

By FLETCHER S. CULPEPPER

Recommended picker settings from face of 2 1/2-in. feed roll to beater for various staple lengths

Staple length	Inches Setting	Staple length	Inches Setting
1	1/8	2	1/2
1 1/4	3/16	2 1/2	3/4
1 9/16	1/4	3	7/8
1 7/8	3/8		

ORGANIZATIONS FOR MAKING 30s YARN

100% 1.5-Den., 1 9/16-in. Fiber

Lap weights and hank numbers

Picker	— 14. oz. per yd.
Card	— .150 hk. (55 grs.)
1st & 2nd drawing	— .150 hk.
Slubber	— .60 hk.
Intermediate	— 1.40 hk.
Rover	— 4.00 hk.

Speeds

Picker	— Kirschner beater	— 600 to 700 rpm.
	— Kirschner beater	— 600 to 700 rpm.
Card	— Cylinder	— 165 rpm.
	— Lickerin	— 375 rpm.
	— Flats	— 3 ins. per min.
	— Doffer	— 9 rpm.
1st & 2nd drawing	— Front roll	— 375 rpm.
Slubber	— Spindles	— 450 rpm.
Intermediate	— Spindles	— 725 rpm.
Rover	— Spindles	— 1150 rpm.
Spinning	— Spindles	— 8000 rpm.

Roll diameters and settings

Picker	— Kirschner beater	— 3/8 in. from face of 2 1/2-in. bot. feed roll
	— Kirschner beater	— 1/4 in. from face of 2 1/2-in. bot. feed roll
Card	— Feed plate to lickerin	— 17/1000 in.
	— Lickerin to cylinder	— 7/1000 in.
	— Flats to cylinder	— 10/1000 in. all around
	— Doffer to cylinder	— 7/1000 in.
Drawing	— Roll diameters	— 1 1/4 ins., 1 in., 1 3/8 ins., 1 3/8 ins.
	— Roll centers	— 1 3/4 ins., 1 7/8 ins., 2 ins.
Slubber	— Roll diameters	— 1 1/4 ins., 1, 1 in.
	— Roll centers	— 1 3/4 ins., 2 3/16 ins.
Intermediate	— Roll diameters	— 1 1/4 ins., 1 in., 1 in.
	— Roll centers	— 1 11/16 ins., 2 ins.
Rover	— Roll diameters	— 1 1/8 ins., 1 in. 1 in.
	— Roll centers	— 1 5/8 ins., 1 7/8 in.
Spinning	— Roll diameters	— 1 in., 7/8 in., 7/8 in.
	— Roll centers	— 1 1/4 ins., 1 1/4 ins. (fixed)

Note: Top middle roll on spinning of the Washburn type (self-weighted)

Twist multipliers

Slubber	— .75	Spinning	— 3.00 filling
Intermediate	— .85		— 3.50 warp
Rover	— .95		

100% 3-Den., 2 1/2-in. Fiber

Lap weights and hank numbers

Breaker picker	— 16. oz. per yd.
Finisher picker	— 12. oz. per yd.
Card	— .150 hk. (55 grs.)
1st & 2nd drawing	— .150 hk.
Slubber	— .70 hk.
Intermediate	— 1.80 hk.
Rover	— 5.00 hk.

Speeds

Breaker picker	— Kirschner beater	— 600 to 700 rpm.
Finisher picker	— Kirschner beater	— 600 to 700 rpm.
Card	— Cylinder	— 165 rpm.
	— Lickerin	— 165 rpm.
	— Flats	— 1 in. per min.
	— Doffer	— 9 rpm.
1st & 2nd drawing	— Front roll	— (1 1/2 ins.) 325 rpm.
Slubber	— Spindles	— 450 rpm.
Intermediate	— Spindles	— 725 rpm.
Rover	— Spindles	— 1175 rpm.
Spinning	— Spindles	— 6750 rpm.

Roll diameters and settings

Breaker picker	— Kirschner beater	— 3/4 in. from face of 2 1/2-in. bot. feed roll
Finish picker	— Kirschner beater	— 3/4 in. from face of 2 1/2-in. bot. feed roll
Card	— Feed plate to lickerin	— 56/1000 in.
	— Flats to cylinder	— 10/1000 in. all. around
	— Lickerin to cylinder	— 7/1000 in.
	— Doffer to cylinder	— 7/1000 in.
1st & 2nd drawing	— Roll diameters	— 1 1/2 ins., 1 1/2 ins., 1 1/2 ins., 1 1/2 ins.
	— Roll center	— 2 3/4 ins., 2 7/8 ins., 3 ins.
Slubber	— Roll diameters	— 1 3/8 ins., 1 3/8 ins., 1 3/8 ins.
	— Roll centers	— 2 11/16 ins., 3 1/8 ins.
Intermediate	— Roll diameters	— 1 3/8 ins., 1 3/8 ins., 1 3/8 ins.
	— Roll centers	— 2 5/8 ins., 3 ins.
Rover	— Roll diameters	— 1 3/8 ins., 1 3/8 ins., 1 3/8 ins.
	— Roll centers	— 2 9/16 ins., 2 7/8 ins.
Spinning	— Roll diameters	— 1 3/8 ins., 1 in., 1 in.
	— Roll centers	— 1 3/4 ins., 1 1/4 ins.

Note: Top middle roll on spinning of the Washburn type (self-weighted)

Twist multipliers

Slubber	— .65	Spinning	— 3.00 filling
Intermediate	— .75		— 3.50 warp
Rover	— .85		

Strengths of Various Spun-Rayon Yarns

1-den., 1 9/16-in. bright (strong staple fiber)

Number	Skein strength	Product
5s	545	2710
10s	274	2740
20s	135	2700
30s	84	2507
60s	32	1931
80s	19	1525
100s	14	1400

1-den., 1 7/8-in. bright (strong staple fiber)

Number	Skein strength	Product
5s	565	2820
10s	283	2830
20s	139	2790
30s	89	2680
60s	35.5	2115
80s	20	1600
100s	15	1500

1.25-den., 1 7/8-in. bright (strong staple fiber)

Number	Skein strength	Product
5s	535	2670
10s	266	2660
20s	134	2690
30s	86	2580
60s	29	1730
80s	18	1450

1.5-den., 1 9/16-in. bright (strong staple fiber)

Number	Skein strength	Product
5s	490	2450
10s	240	2400
20s	120	2400
30s	77	2300
40s	51	2040
50s	33	1650

3-den., 1 9/16-in. bright (standard staple fiber)

Number	Skein strength	Product
5s	410	2050
10s	200	2000
15s	120	1800
20s	82	1650
24s	58	1400

5.5-den., 1 9/16-in. bright (standard staple fiber)

Number	Skein strength	Product
5s	270	1350
10s	130	1300
15s	67	1000

Organizations, Speeds, and Settings for Carding and Spinning Staple Rayon

(From "Rayon Technology—Handbook for Textile Mills," McGraw-Hill Book Co., 1953)

Recommended Spinning Limit of Each Denier

Figures are coordinated with the various lengths (viscose only):

Denier	Staple length (Ins.)	Spinning limit cotton number
1.0	1 9/16	80S
1.25	1 7/8	70S
1.5	1	40S
1.5	1 9/16	50S
1.5	2	55S
3.0	1 1/4	18S
3.0	1 9/16	22S
3.0	2	24S
3.0	2 1/2	26S
5.5	1*	
5.5	1 9/16	10S
5.5	2	12S
5.5	2 1/2	14S
5.5	3	16S

* Not satisfactory in 100% form.

Speeds for Lickerin and Doffer; also Feed Plate Settings

Below is a chart showing lickerin and doffer speeds as well as feed plate settings for various deniers and lengths of rayon staple using a cylinder speed of 165 rpm.

Denier	Staple length (Ins.)	Lickerin Rpm.	Doffer Rpm.	Feed plate settings (Ins.)
.75	1 9/16	165	4	0.034
1.0	1 9/16	165	5	0.034
1.0	1 7/8	165	4	0.034
1.25	1 9/16	165	6	0.034
1.25	1 7/8	165	5	0.034
1.5	1 9/16	371	10	0.017
1.5	2	165	8	0.034
1.5	3	120	4	0.068
3.0	1 9/16	371	12	0.017
3.0	2	371	10	0.034
3.0	2 1/2	165	8	0.068
3.0	3	120	6	0.068
5.5	1 9/16	371	12	0.017
5.5	2	371	10	0.034
5.5	2 1/2	165	10	0.034
5.5	3	165	8	0.068
8.0	2	371	10	0.034
8.0	2 1/2	165	8	0.068
8.0	3	165	6	0.068

Roving-Twist Multipliers

The 1.5 denier, 1 9/16 in. rayon staple requires from 25 to 30% less twist than normal length cotton. Reduction in twist will be greater for the finer deniers and less for the coarser deniers. For example, such types as 5.5 denier will require just as much twist and possibly more than normal cotton. This, of course, is due primarily to the fact that the fibers are much coarser than cotton fibers. The principal reason for less twist on deniers such as 1.5, 1.25 and 1.0 is their greater ratio of length to diameter. Approximate twist multipliers are listed below for normal rovings and yarns.

Denier	Staple length (Ins.)	Slubber	Intermediate	Speeder
1.0	1 9/16	0.65	0.75	0.85
1.0	1 7/8	0.60	0.70	0.80
1.25	1 7/8	0.65	0.75	0.85
1.5	1	1.25	1.35	1.45
1.5	1 1/4	1.10	1.20	1.30
1.5	1 9/16	0.75	0.85	0.95
1.5	2	0.65	0.75	0.85
1.5	2 1/2	0.55	0.65	0.75
1.5	3	0.45	0.55	0.65
3.0	1 9/16	0.90	1.00	1.10
3.0	2	0.75	0.85	0.95
3.0	2 1/2	0.65	0.75	0.85
3.0	3	0.55	0.65	0.75
5.5	1 1/4	1.40	1.50	1.60
5.5	1 9/16	1.20	1.30	1.40
5.5	2	1.10	1.20	1.30
5.5	2 1/2	1.00	1.10	1.20
5.5	3	0.75	0.85	0.95

Picker Settings

Feed-roll beater settings for various lengths are listed below when Kirschner beaters operated at low speeds are used. These settings do not necessarily mean the ideal in every installation.

Staple length (Ins.)	Setting in (Ins.)
1	1/8
1 1/4	1/8
1 9/16	1/4
2	3/8
2 1/2	1/2
3	5/8

Drawing-Frame Settings

Drawing frame settings in inches are as follows:

Staple length (Ins.)	1 1/4-in. front roll 1st-2nd	2nd-3rd	3rd-4th
1	1 1/4	1 3/8	1 1/2
1 1/2	1 5/8	1 3/4	1 7/8
1 9/16	1 11/16	1 13/16	1 15/16
	1 1/2-in. front roll		
1 7/8	2 1/16	2 3/16	2 5/16
2	2 3/16	2 5/16	2 7/16
2 1/2	2 3/4	2 7/8	3
3	3 1/4	3 3/8	3 1/2

Spinning-Frame Twist

Optimum twist for maximum strength is less for rayon than for cotton. The chart below gives figures that illustrate the optimum twist for strength of the various types. Figures are also available that show that, for the average type 1.5 den., 1 9/16 in. staple, the strength for the yarn decreases approximately 10% for every five turns increase in twist over the appended values.

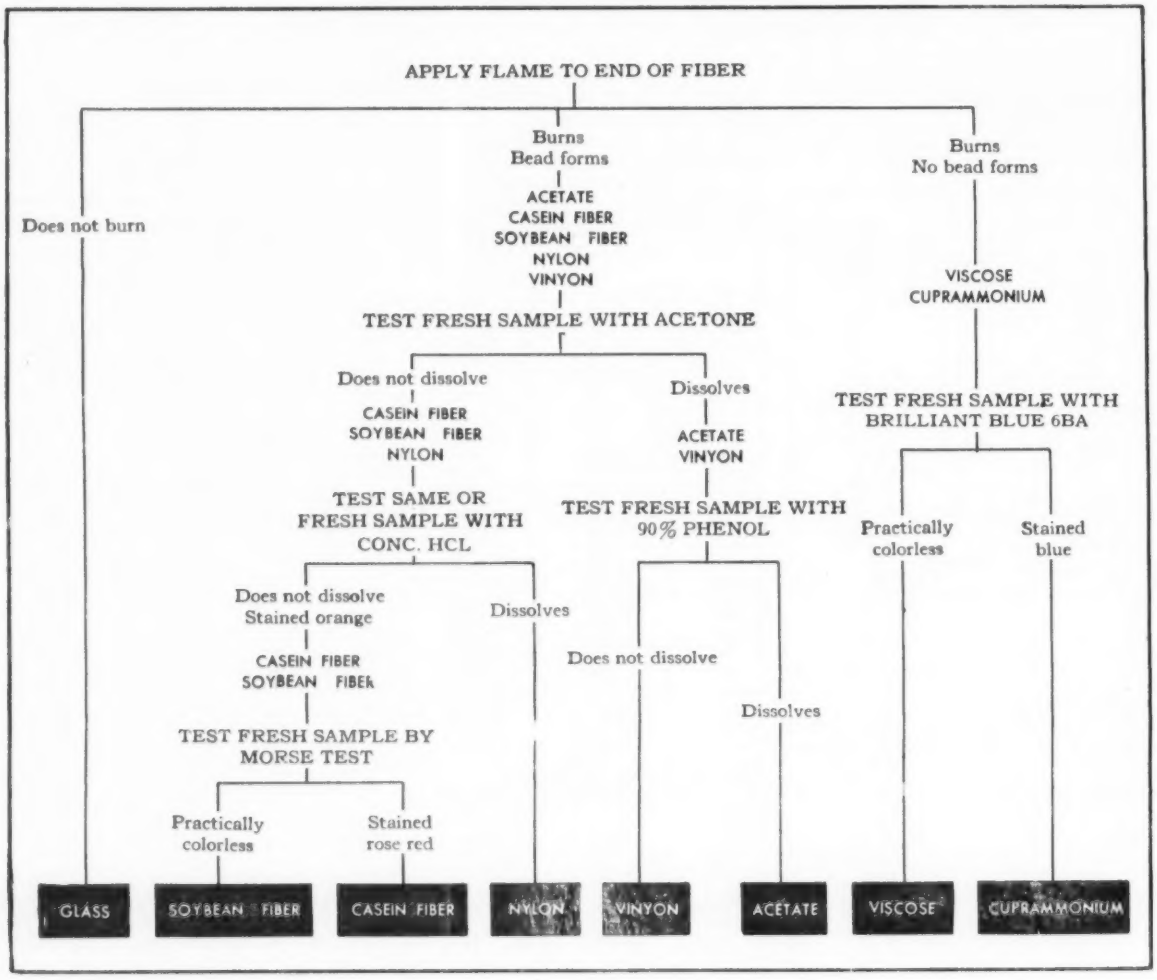
Denier	Staple length (Ins.)	Spinning twist multiplier
1.0	1 9/16	2.90
1.0	1 7/8	2.90
1.25	1 7/8	2.90
1.5	1	3.25
1.5	1 1/4	3.25
1.5	1 9/16	3.00
1.5	2	2.90
1.5	2 1/2	2.75
1.5	3	2.75
3.0	1 9/16	3.25
3.0	2	3.00
3.0	2 1/2	2.90
3.0	3	2.75
5.5	1 1/4	4.00
5.5	1 9/16	3.75
5.5	2	3.50
5.5	2 1/2	3.25
5.5	3	3.25

Roving-Frame Settings

The table below shows settings for various types of staple for the various frames. Upper group of settings is for standard frames. Lower group of settings is for special large roll, wide roll stand frames.

Staple length (Ins.)	Conv. slubber 1-2	2-3	Intermediate 1-2	2-3	Speeder 1-2	2-3	Super-draft 1-2	3-4
1	1 3/16	1 5/8	1 1/8	1 1/2	1 1/16	1 3/8	2 1/8	1 9/16
1 9/16	1 3/4	2 3/16	1 11/16	2	1 5/8	1 7/8	2 1/8	2 1/8
2	2 3/16	2 5/8	2 1/8	2 1/2	2 1/16	2 3/8	2 7/16	2 9/16
2 1/2	2 11/16	3 1/8	2 5/8	3	2 9/16	2 7/8	3	3 1/16
3	3 3/16	3 5/8	3 1/8	3 1/2	3 1/16	3 3/8	3 1/2	3 9/16

Identification of Synthetic Fibers



The method of identification of synthetic fibers outlined here appeared originally in *Textile Research*. Before proceeding with the tests, one must first ascertain by examination under the microscope, or by other methods, that the sample is not composed of cotton, wool, silk, asbestos, or other natural fibers.

Following is a description of the tests:

Ignite sample: Apply flame to end of single fiber. Failure of fiber to burn indicates it is glass. If fiber burns and bead forms, it may be acetate (acetic-acid odor); casein fiber or soybean fiber (burnt hair odor); nylon (amide odor, round hard bead); or Vinyon (paraffin-wax odor, fiber shrinks from flame). If fiber burns but no bead forms, it may be viscose or cuprammonium.

Acetone test: Agitate fresh sample of fibers vigorously for 15 min. at room temperature in about 50 times its weight of acetone. If fibers dissolve, they may be acetate or Vinyon. If fibers do not dissolve, they may be casein fiber, soybean fiber, or nylon. (See ASME method for further details.)

Phenol test: Agitate fresh sample of fibers for about 15 min. at room temperature in about 50 times its weight of a 90% phenol solution. If fibers dissolve, the test indicates they are acetate. If fibers do not dissolve, the test indicates they are Vinyon.

Hydrochloric acid test: Agitate fresh sample of fibers (or residue from acetone test) for 5 min. at 30 to 40° C. in about 50 times its weight of concentrated hydrochloric acid. If fibers dissolve, the test indicates they are nylon. If fibers are stained orange but do not dissolve in the concentrated hydrochloric acid, they may be casein fibers or soybean fibers.

Morse test: Treat fresh sample of fibers until partially dissolved in 18% sodium hydroxide. To approximately 1 cc. of solution add 4 drops of iso-amyl alcohol and 15 drops of 30% hydrogen peroxide. Mix well and heat over a steam bath until foaming has subsided and most of the alcohol and water have evaporated. Add 2 cc. of 5N hydrochloric acid and reheat on steam bath for 10 to 15 min. and observe color. Casein fibers turn rose red. Soybean fibers remain colorless. (When partially dissolved, the fibers disintegrate into a cheese-like floc; a small piece of this floc may be used for the test; the solution tested should be very highly concentrated with respect to the amount of fibrous material. The hydrogen peroxide should be kept on ice and used cold.)

Brilliant Blue 6BA: Treat fresh sample of fibers for 3 min. at room temperature in a 0.2% aqueous solution of Brilliant Blue 6BA. Rinse for 5 min. in warm water at 50 to 60° C. Viscose remains practically colorless; cuprammonium fibers are stained blue.

Spinning Limits for Rayon Staple on Cotton Systems

A general rule applicable especially to synthetic fibers about 1½ ins. in length spun on the cotton system is that the number of fibers in a cross section should not be fewer than 88 approximately. Alternative formulas for computing the number of fibers are:

$$\text{number of fibers per cross section} = \frac{\text{yarn size in denier}}{\text{fiber denier}}$$

$$= \frac{5315 \div \text{fiber denier}}{\text{yarn number (cotton)}}$$

Numerical example: Can viscose staple of 3 den., $1\frac{7}{16}$ ins. in length be spun into 30s cotton number? The denier equivalent of 30s cotton number is 177 denier.

$$\text{number of fibers per cross section} = \frac{177}{3} = 59$$

$$= \frac{5315 \div 3}{30} = 59$$

The number 59 being less than 88, a 30s yarn is outside the cotton-system spinning limit.

For blends, the number of fibers for each component may be computed separately and added.

Numerical example: Can 30s cotton number be spun from a blend of 50% $1\frac{7}{16}$-in., 1.25-den. viscose and 50% $1\frac{7}{16}$-in., 6-den. acetate? The denier equivalent of 20s cotton number is 266.

$$\text{number viscose fibers} = \frac{0.5 \times 266}{1.25} = 106$$

$$\text{number acetate fibers} = \frac{0.5 \times 266}{6} = \frac{22}{128}$$

Total

This blend has more than 88 fibers per cross section and is therefore spinnable on the cotton system.

Spinning Nylon Staple on the Cotton System

(From *Nylon Technology*, Karl H. Inderfurth, McGraw-Hill Book Co., Inc., 1953.)

Blends containing small percentages of nylon staple require few, if any, machine-setting changes. As the nylon content rises, machine settings must be adjusted. This fact holds true throughout all the yarn-manufacturing processes.

Picking

Any conventional pickers are suitable for nylon blends. The two-process picker is to be preferred for 100% nylon.

Feed—Control of feed is essential to minimize the possibility of weight variations.

Beaters—To keep stock fully open and undamaged, a Kirschner beater is best. Speeds up to 1,000 rpm. on 100% nylon—and generally high for nylon blends—are recommended. Too many passages through the beater will cause neps. Feed-roll settings next to the beater depend on denier and staple length:

1.5-den., 1½-in. staple ..... ⅛ in.
3-den., 1½-in. staple ..... ½ in.

Settings are best determined by mill test for specific blends.

Cages—To minimize chances of split laps, set dampers on the cages to allow the stock to be drawn onto the top cage. Run fans at about 1,400 rpm.

Calender rolls—Speed up slightly and keep pressure to a minimum. Use a split-lap eliminator and place a heavy paper cover over the lap pins.

The lap—For 100% nylon a light lap is desirable, 12 to 13 oz. As the nylon content decreases, heavier laps are possible. Pneumatic-pressure picker-lap winders are especially suitable for nylon.

Cleanliness, proper humidity, and frequent inspections help to maintain quality.

Carding

Successful carding is dependent on good picker laps. The flat-top card is the most widely used.

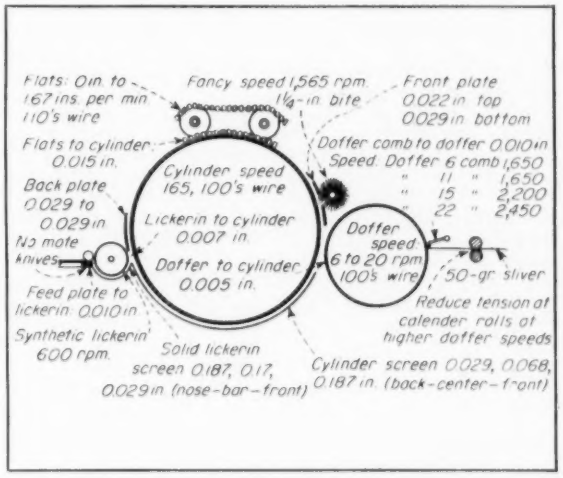
Feed—Use the single-lap feed method for feeding flat-top cards. A double-lap feed works well for the roller-top cards.

Lickerin—A regular "synthetic lickerin" of the type used for rayon staple is best for nylon.

Card speeds—Should be somewhat lower than for rayon but can be faster than for cotton. In general, the finer the denier, the slower the speeds.

Fancy roll—In carding 100% nylon or blends of high nylon content, a fancy roll aids production of uniform sliver. A 7-in.-dia. roll set for uniform penetration across the cylinder is best. Depth of penetration is best determined by each mill.

Doffer comb and calender roll—The amount of tension at these points must be minimized. Too much tension will affect the crimp and produce a sliver that will have a tendency to creep back.


Flats: 0 in. to 167 ins. per min. 110's wire
Fancy speed 1,565 rpm. 1⅛-in. bite
Front plate 0.022 in. top 0.029 in. bottom
Flats to cylinder 0.015 in.
Doffer comb to doffer 0.010 in
Speed: Doffer 6 comb 1,650
" 11 " 1,650
" 15 " 2,200
" 22 " 2,450
Back plate 0.029 to 0.029 in
Cylinder speed 165, 100's wire
Lickerin to cylinder 0.007 in.
Doffer to cylinder 0.005 in.
Doffer speed 6 to 20 rpm 100's wire
No mote knives
50-gr. sliver
Feed plate to lickerin 0.010 in.
Reduce tension at calender rolls at higher doffer speeds
Synthetic lickerin 600 rpm.
Solid lickerin screen 0.187, 0.17, 0.029 in. (nose-bar-front)
Cylinder screen 0.029, 0.068, 0.187 in. (back-center-front)

Card diagram with clearances and speed (Flat-top cards)

Blending and Drawing

Any natural fibers to be blended may be added during drawing. This procedure allows natural fibers to be cleaned separately.

Drawing Frames

Nylon may be drawn on three-roll, four-roll, or five-roll frames. Very accurate settings are necessary. Staple length plus ⅛ in. for the first to the second roll, followed by the usual graduations, is recommended.

Top rolls—Metallic top rolls are best because nylon is very

abrasive. Roll weight should be sufficient to prevent jumping, but not excessive.

Trumpet—The setting should be slightly closer to the calender nip than the staple length. When a sliver jams, a smaller size trumpet will help.

Processing the Roving

Low-draft frames (six to one, or less) are best. Conventional slubbers, intermediates, and speeders, with low draft, work well with 3.0- and 1.5-den. nylon.

Twist multiplier—Uniformity can only be maintained by use of a low-twist multiplier—between 0.6 and 0.8.

Other factors—Control tensions carefully. Keep humidity up to control static and fly. Settings for nylon are generally the same as for rayon, but speeds are slower. Leather- or synthetic-covered rolls will work, but synthetic covers wear longer. Creels, flyers, and clearers should be kept clean.

Spinning

Conventional spinning frames with a draft of 6 to 8 are best.

Twist multiplier—For knitting yarns, 3 to 3.5; for weaving yarns, 3.75.

Twist—Low-twist yarns pack less densely on the bobbins, but low-twist yarns pill more readily. A compromise must be chosen by each mill.

Tension—As the yarn reaches its final stages of preparation, tension becomes most important. Yarn quality depends on low-tension winding from bobbin to bobbin.

Other considerations—Settings, speeds, and other items are similar to those used for rayon.

Roller-Top Card Settings and Speeds for 100% Nylon Staple

	1st	2nd	3rd
Worker to cylinder	0.010 in.	0.010 in.	0.010 in.
Worker's speed	6 to 8 rpm.		
Worker to stripper	0.010 to 0.017 in.	0.010 to 0.017 in.	0.010 to 0.017 in.
Stripper's speed	300 to 325 rpm.		
Stripper to cylinder	0.010 in.	0.010 in.	0.010 in.
Cylinder and doffer		0.007 in.	
Feed plate to lickerin		0.007 to 0.022 in.	
Lickerin speed		180 rpm.	
Lickerin to cylinder		0.007 to 0.010 in.	
Cylinder speed		165 rpm.	
Doffer comb to doffer		0.012 to 0.022 in.	
Doffer		6.5 to 8 rpm.	
Screen, front		0.187 in.	
Screen, center		0.058 in.	
Screen, back		0.029 in.	
Lickerin screen, blank		0.029 to 0.034 in.	
Lickerin screen, nose		0.125 to 0.187 in.	
Mote knives, top		0.022 in.	
Mote knives, bottom		0.017 in.	
Fancy roll		1 to 1.5 in.	
Fancy-roll speed		1,500 to 1,600 rpm.	

Dyeing Synthetic Fibers in Blends

The approach to any problem of dyeing the synthetic fibers in a fabric is governed by cost first and practicality second. To keep the cost low, some sacrifice of fastness properties is often necessary. The dyestuff chemists and the mills have worked on the problems of blends, and some new dyestuff types and new techniques have developed.

Where companion fibers are chosen for their similarity in dyeing properties (such as Vicara and wool, viscose and cotton, nylon and wool, and acetate and nylon) the problems disappear; but where wool and Orlon, wool and Dacron, acetate and viscose, or any dissimilar fibers are blended, a decision must be made before the line is styled: are the fibers to be stock dyed and blended for a solid shade of maximum fastness? Or, as is often done, is one fiber to be dyed in stock (or purchased in the dope-dyed form) and then blended with an undyed fiber for later cross- or union-dyeing treatment? The subsequent dyeing may be done in yarn or fabric form for a multitude of combinations.

The real problems occur when medium to heavy shades of maximum fastness are required in a solid union shade on dissimilar fibers.

Techniques

Dynel- or Dacron-Viscose Blends

The dyeing of blends of viscose with other synthetic fibers falls into two distinct categories. When the other fiber can be dyed with acetate colors, it is possible to dye the blend by the one-bath method. Such is the case with Dacron- or Dynel-viscose blends. The former must be dyed with a suitable swelling agent, such as Velanol NB or TC, and selected acetate colors, while the viscose component is filled in with a normal range of direct colors with or without aftertreatment.

When a solid swelling agent such as orthophenyl phenol or benzoic acid is decided upon for Dacron, it is necessary to use a two-bath method whereby Dacron is dyed first at the boil and viscose cross dyed at lower temperatures. When Dynel-viscose blends are dyed, a similar principle is employed, but it is not absolutely essential to use a swelling agent, since Dynel exhibits a direct affinity for acetate colors.

Orlon- or Acrilan-Viscose Blends

When viscose is blended with either Orlon or Acrilan, the former has little affinity for acetate colors at conventional temperatures while the latter produces full shades but with unsatisfactory fastness. In a two-bath method, the Orlon is dyed with selected acid colors at the boil with cupric sulfate reduced by hydroxylammonium sulfate. The stain on the viscose is then soaped off and the latter cross dyed with selected direct colors at temperatures not over 180° F., with Glauber's salt rather than common salt as an accelerating agent. Common salt must be avoided in the cross dyeing since the acid colors on Orlon have a tendency to be stripped by the chloride ion.

It does not seem practical to dye this blend by the one-bath method because the drop in the pH value accompanying the addition of the reduced copper would cause the direct colors to be precipitated and retarded.

Blends of Acrilan and viscose raise another problem. In dyeing this blend, the cuprous ion is unnecessary because Acrilan lends itself easily to the conventional methods. The only requirement is the introduction of a strong mineral acid, such as sulfuric acid, into the dyebath. The experience in some plants has been that it is quite safe to use up to 2% of acid at temperatures up to 200° F. with little damage to viscose, provided a thorough soaping is given at the completion of the dyeing process.

As in the case of Orlon, it is not practical to use a one-bath method because of the low pH value. The one-bath method is preferable in cases of light shades when the amount of sulfuric acid necessary for the exhaustion of colors on Acrilan is small and therefore the resulting pH value can be withstood by selected direct colors. In this case, both acid colors and direct colors are added to the dyebath at the start.

Nylon-Viscose Blends

Two distinct methods can be employed for dyeing nylon-

Note: *Portions of this material were extracted from a paper by Edward Szlosberg that appeared in* TEXTILE WORLD.

viscose blends. A one-bath method can be used when the nylon is dyed with acetate colors and the viscose with selected direct colors. Some staining of nylon by direct colors will occur, but this staining can be prevented by small additions of alkali. When the fastness requirements are high, however, a two-bath method is used where viscose is dyed with vat colors and nylon with acid colors.

Wool-Dacron Blends

When the Dacron is to be left white, no difficulty is encountered, since a large majority of acid, chrome, or premetallized colors have no affinity for Dacron. But to dye Dacron and leave the wool white, it becomes necessary to select acetate colors that will give the least staining of wool and to soap off the dyed material to remove any staining left on the wool component.

In dyeing of solid shades, a one-bath method can be adopted with some success. Dacron is dyed with selected acetate colors and a swelling agent, such as Velanol NB or TC; and wool is filled in with neutral-dyeing acid colors, chrome colors, or the new types of premetallized colors. The bath should be maintained with additions of ammonium sulfate or acetic acid at a pH of 5 to 6 during the first 30 mins. of dyeing to prevent tarring the acetate dyestuffs and staining the wool. If chrome colors are used for wool, the dyebath is acidified after 30 mins. of boiling and the bichromate is added in the usual manner.

This method, although used on a commercial scale, is not completely satisfactory. Even the selected acetate colors will stain wool to some degree, and this stain in turn will deteriorate the fastness properties of the wool component. The most urgent need is for a resisting agent that, when introduced into the bath, will prevent acetate colors from staining the wool as many of the already existing compounds successfully resist acid colors on nylon, and to a lesser degree on wool.

Wool-Orlon Blends

In dyeing unions on wool-Orlon blends, it is necessary to depart from the cuprous-ion technique and the use of acid colors for the Orlon because wool will invariably absorb more of the acid colors, even when large amounts of reduced copper are used.

Basic colors have a direct affinity for Orlon and can be applied without the use of assistants. Basic colors, however, when applied to Orlon in the presence of wool, will stain the latter rather heavily, in some cases yielding a shade on wool equal to or deeper than the shade on Orlon. When basic colors are applied with acetic acid and a nonionic dispersing agent, such as Ekaline F, the staining of wool is slight and can be soaped off after dyeing. Selected basic colors, when dyed on Orlon, will satisfy many of the fastness requirements.

The method of dyeing this blend will depend upon the type of dyestuff chosen for the wool component. If the dyes used are of a neutral-dyeing type, it is necessary to use a two-bath method, since a large quantity of acetic acid must be added along with basic colors. If, however, level acid or chrome colors are decided upon for the wool component, a one-bath method can be used.

Caution: Some of the basic colors, when mixed with the oppositely charged acid colors, may precipitate in the dyebath. In such cases a two-bath method is necessary.

The two-bath procedure, therefore, depends upon treating the blend with 10% of acetic or hydroxyacetic acid and 5% of Ekaline F. These chemicals are added to a cold dyebath and followed by selected basic colors. The temperature is slowly raised to the boil, and boiling is continued for 1½ hrs. When a satisfactory shade is obtained on Orlon, the material is rinsed and soaped off and the wool is cross dyed by conventional methods. Some bleeding of color from the Orlon will occur in the second bath, and for this reason the temperature should be kept as low as practicable.

The method described here is not universally accepted and cannot be used without difficulty. Most wool-Orlon blends are dyed separately in raw-stock or top form, the Orlon being dyed under pressure, and the components are blended together in subsequent operations. The basic-color method is given, however, as an indication of a promising possibility, mainly applicable to piece dyeing.

Wool-Nylon Blends

More experience has been had with wool-nylon blends than with any other. While nylon in light shades will absorb a larger share of acid color than wool, the solidity improves as the depth increases. At medium depth, usually both nylon and wool dye to the same degree. In concentrated dyebaths, nylon will reach its saturation point and dye no longer, while wool will still absorb its share of dyestuff and therefore will dye darker.

The latter tendency is not so important because in deep shades the difference between the nylon and wool is not easily perceptible and the solid surface is apparent. In light shades, however, the slightest difference in depth is visible. In such cases, it is necessary to choose the dyestuffs skillfully and to introduce into the bath resisting agents for nylon.

Wool-Acrilan Blends

The production of solid shades on wool-Acrilan blends was difficult when the Acrilan component was of 1952-production type. The improved type of CN 33 has greater affinity for dyestuffs and is much more adaptable for blending with wool.

It is now possible to produce solid shades by a one-bath method with selected level-dyeing acid colors and sulfuric acid at the boil. The premetallized colors and the neutral-dyeing acid colors are, in most cases, unsuitable for this purpose.

It is usually advantageous to pretreat this blend in 2% sulfuric acid at 200° F. for 15 mins. and to rinse well. After this pretreatment, the dyebath is made up cold with selected colors and part of the required sulfuric acid, the temperature is raised to the boil, and boiling is continued for 1½ hrs. while the remainder of the acid is added gradually.

Faults in Circular-Knit Fabrics and Their Remedies

By JAMES H. BLORE, *Assistant Editor*, TEXTILE WORLD

I. Full-Fashioned Hosiery

		Nylon				Rayon				Cotton				
		Denier				Denier				Yarn number			Normal yarn*	
	Gauge	Minimum	Maximum	Normal	Average tpi.	Minimum	Maximum	Normal	Average tpi.	Minimum	Maximum	Normal	Singles tpi.	Ply tpi.
Leg	39					75	200	150	10–Z	80/2	50/2	60/2	30	23
	42					75	150	100	25–Z	100/2	60/2	70/2	35	25
	45	30	40	40	30–Z	50	100	75	30–Z	100/2	70/2	80/2	38	27
	48	30	40	30	35–Z	50	100	75	30–Z	100/2	80/2	90/2	40	28
	51	15	30	20	40–Z	50	75	50	35–Z	120/2	90/2	100/2	42	29
	54	15	30	20	40–Z	50	75	50	35–Z	140/2	120/2	120/2	46	31
	57	15	30	20	40–Z	50	65	50	35–Z					
	60	12	30	15	0	50	65	50	35–Z					
	66	10	15	15	0									
	72	10	15	12	0									
Welt	39					100	200	150	10–Z	70/2	50/2	60/2	30	23
	42					100	150	125	10–Z	80/2	60/2	70/2	35	25
	45	60	70	70	10–Z	75	125	100	15–Z	100/2	70/2	80/2	38	27
	48	60	70	60	7–Z	75	125	100	15–Z	120/2	90/2	90/2	40	28
	51	40	60	60	7–Z	50	100	100	15–Z	140/2	100/2	100/2	42	29
	54	40	60	40	10–Z	50	75	75	20–Z	140/2	110/2	110/2	44	30
	57	30	40	30	15–Z	50	85	85	20–Z					
	60	30	40	30	15–Z									
	66	20	30	30	15–Z									
	72	20	30	20	15–Z									
Rein-forcing (heel and sole)	39					100	125	100	15–Z	90/2	70/2	80/2	38	27
	42					75	100	100	15–Z	100/2	80/2	90/2	40	28
	45	60	70	60	7–Z	75	100	100	15–Z	100/2	80/2	100/2	42	29
	48	60	70	60	7–Z	75	100	100	15–Z	120/2	90/2	100/2	44	30
	51	40	60	40	10–Z	50	75	75	20–Z	140/2	100/2	120/2	46	31
	54	30	40	40	10–Z	50	75	75	20–Z	140/2	120/2	120/2	46	31
	57	30	40	30	15–Z	50	75	75	20–Z					
	60	30	40	30	15–Z									
	66	20	30	30	15–Z									
	72	20	30	20	15–Z									
Toe	37					Rayon not generally used (See Cotton)				90/2	70/2	80/2	38	27
	42									100/2	80/2	90/2	40	28
	45	60	70	60	7–Z					100/2	80/2	100/2	42	29
	48	60	70	60	7–Z					120/2	90/2	100/2	44	30
	51	40	60	40	10–Z					140/2	100/2	120/2	46	31
	54	30	40	40	10–Z					140/2	120/2	120/2	46	31
	57	30	40	30	15–Z									
	60	30	40	30	15–Z									
	66	20	30	30	15–Z									
	72	20	20	20	15–Z									

II. Seamless Hosiery (Women's)

			Nylon				Rayon				Cotton				
			Denier				Denier				Yarn number			Singles	Ply
	Gauge	3½-in. needles	Minimum	Maximum	Normal	Tpi.	Minimum	Maximum	Normal	Tpi.	Minimum	Maximum	Normal	tpi.	tpi.
Leg	48	176					150	300	150	PT†	50/2	30/2	40/2	20	14
	48	200					150	300	150	PT	50/2	40/2	40/2	20	14
	48	220					150	250	150	PT	60/2	40/2	50/2	23	15
	54	240					125	250	125	10–S	60/2	50/2	60/2	25	16
	54	260					125	250	125	10–S	80/2	60/2	70/2	27	18
	70	280					100	250	100	15–S	100/2	70/2	80/2	29	19
	70	300					75	150	100	15–S	120/2	80/2	90/2	31	20
	70	340	20	40	30	30–S	65	100	75	20–S	140/2	100/2	120/2	35	23
	75	400	15	30	15	0	50	75	50	25–S					
	80	474	10	15	12	0									

Equivalent singles may be used where two-ply yarns are specified.

*FTC minimum for lisle-twist yarns.

† Producers Twist

(Continued on next page)

Faults in Circular-Knit Fabrics and Their Remedies *(Continued)*

II. Seamless Hosiery *(Continued)*

	Gauge	3½-in. needles	Nylon Denier Minimum	Nylon Denier Maximum	Nylon Denier Normal	Nylon Tpi.	Rayon Denier Minimum	Rayon Denier Maximum	Rayon Denier Normal	Rayon Tpi.	Cotton Yarn number Minimum	Cotton Yarn number Maximum	Cotton Yarn number Normal	Cotton Singles tpi.	Cotton Ply tpi.
Welt	48	176					150	300	300	PT	50/2	30/2	40/2	20	14
	48	200					150	300	300	PT	50/2	40/2	40/2	20	14
	48	220					150	250	250	PT	60/2	40/2	50/2	23	15
	54	240					125	250	250	PT	60/2	50/2	50/2	23	15
	54	260					125	250	250	PT	70/2	50/2	60/2	25	16
	70	280					100	200	150	PT	80/2	60/2	80/2	27	18
	70	300					100	150	125	PT	100/2	70/2	80/2	29	19
	70	320					75	150	100	10–S	100/2	80/2	80/2	29	19
	70	340	40	60	60	7–S	75	125	100	10–S	120/2	100/2	100/2	32	21
	75	400	40	60	60	7–S	75	100	100	10–S					
	80	474	20	30	20	15–S									
Heel and toe	48	176									70/1	50/1	60/1	25	
	48	200									80/1	60/1	70/1	27	
	48	220									80/1	60/1	70/1	27	
	54	240									90/1	70/1	80/1	27	
	54	260									90/1	70/1	80/1	27	
	70	280									100/1	90/1	100/1	32	
	70	300									120/1	100/1	100/1	32	
	70	340	40	70	60	7–S					140/1	120/1	120/1	35	
	75	400	40	60	40	7–S					140/1	120/1	120/1	36	
	80	474	20	30	20	15–S					140/1	120/1	140/1	36	
High heel and double sole	48	176									70/1	50/1	60/1	25	
	48	200									80/1	60/1	70/1	27	
	48	220							75		80/1	60/1	70/1	27	
	54	240							75		90/1	70/1	80/1	29	
	54	260							50		90/1	70/1	80/1	29	
	70	280							50		100/1	90/1	100/1	32	
	70	300							50		120/1	100/1	100/1	32	
	70	320							50		120/1	100/1	120/1	35	
	70	340							50		140/1	120/1	140/1	36	

Rayon not generally used (See Cotton)

III. Socks (Men's)

	Needles	Diameter	Cotton Yarn number Minimum	Cotton Yarn number Maximum	Cotton Yarn number Normal	Worsted Yarn number Minimum	Worsted Yarn number Maximum	Worsted Yarn number Normal	Woolen Run Minimum	Woolen Run Maximum	Woolen Run Normal	Rayon Denier Minimum	Rayon Denier Maximum	Rayon Denier Normal
Leg and foot	72	4 1/4	3	1	2	4	2	3	1.5	1	1			
	84	4	8	4	6	12	6	8	4	2	3			
	108	3 3/4	20/2	10/2	14/2	2/30	2/15	2/20	5	2.5	3.5			
	132	4 1/4	30/2	14/2	16/2	2/45	2/20	2/24	8	3	4			
	144	3 3/4	36/2	16/2	20/2	2/54	2/24	2/30	10	4	5			
	160	3 3/4	40/2	20/2	24/2	2/60	2/30	2/36				200	600	450
	176	3 1/2	44/2	24/2	30/2	2/66	2/36	2/42				200	450	300
	200	3 1/2	50/2	30/2	36/2	2/70	2/40	2/50				150	450	300
	220	3 1/2	60/2	36/2	50/2	2/80	2/50	2/70				150	300	250
	240	3 1/2	70/2	40/2	60/2	2/90	2/60	2/80				125	300	200
Rib top	72	4 1/4	3	1	2	4	2	3	1.5	1	1			
	84	4	8	4	6	12	6	9	4	2	3			
	108	3 3/4	10	5	8	15	8	12	5	3	4			
	132	4 1/4	30/2	14/2	16/2	2/44	2/22	2/24	7.5	4.5	5			
	144	3 3/4	30/2	16/2	20/2	2/44	2/24	2/30	7.5	5.5	6			
	160	3 3/4	36/2	18/2	24/2	2/50	2/26	2/30						
	176	3 1/2	40/2	20/2	28/2	2/60	2/30	2/36						
	200	3 1/2	44/2	24/2	30/2	2/66	2/36	2/40						
	220	3 1/2	44/2	24/2	36/2	2/66	2/36	2/50						
	240	3 1/2	50/2	30/2	40/2	2/70	2/44	2/60						

Rayon not generally used (See Cotton)

(Continued on next page)

Faults in Circular-Knit Fabrics and Their Remedies *(Continued)*

III. Socks (Men's) *(Continued)*

			Cotton			Worsted			Woolen			Rayon		
			Yarn number			Yarn number			Run			Denier		
	Needles	Diameter	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal
Heel and toe	72	4 1/4	8	1	2	4	2	3	1.5	1	1	Rayon not generally used (See Cotton)		
	84	4	8	5	6	12	6	9	4	2	3			
	108	3 3/4	12	6	7	18	12	16	6	4	5.5			
	132	4 1/4	30/2	14/2	16/2 24/1	2/44	2/20	2/36 1/36	7.5	4.5	6.5			
	144	3 3/4	30/2	16/2	20/2 16/1	2/44	2/24	2/40 1/40						
	160	3 3/4	36/2	18/2	28/2 28/1	2/50	2/26	2/42 1/42						
	176	3 1/2	40/2	20/2	30/2 30/1	2/60	2/30	2/44 1/44						
	200	3 1/2	44/2	24/2	36/2 60/1	2/66	2/32	2/50						
	220	3 1/2	44/2	24/2	30/2	2/66	2/36	2/50						
	240	3 1/2	50/2	30/2	36/2	2/70	2/44	2/60						
High heel and double sole	160	3 3/4	60	30	40									
	176	3 1/2	70	30	40									
	200	3 1/2	80	40	50									
	220	3 1/2	90	50	60									
	240	3 1/2	90	60	70									

IV. Underwear and Outerwear

			Cotton			Worsted			Woolen			Rayon		
			Yarn number			Yarn number			Run			Denier		
Machine	Needles Gauge	Cut Needles Inch	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal
Latch-needle sinker top (jersey stitch)	12	6	6	2	4	10	4	8	3	1	2			
	12	8	8	3	6	12	6	10	4	2	3			
	18	10	10	4	8	18	10	16	6	3	4			
	24	12	16	6	10	22	12	18	12	6	8			
	36	14	20	8	14	30	15	26	16	10	12			
	36	16	24	10	16	36	17	28						
	36	18	26	12	18	42	22	36				200	450	300
	42	20	32	16	20	46	26	40				150	450	300
	50	22	40	24	24	50	36	42				100	300	300
Spring-needle sinker top		24	40	20	26	50	28	30				100	300	150
		26	50	24	30	60	32	36				100	300	150
		28	50	30	36	70	36	40				75	300	150
		34	80	50	60							50	150	75
Circular rib (1X1)	8	2 1/2	6	2	2.5	2/20	2/4	2/8	1	2	1			
	10	3	6	2	3	2/20	2/6	2/10	1	3	2			
	10	4	8	4	6	2/18	2/8	2/12	2	4	3			
	12	5	9	5	7	2/22	2/9	2/16	2.5	5	3.5			
	18	6–7	10	6	8	2/26	2/10	2/20	3	5	4			
	24	8	16	8	10	2/30	2/18	2/26	4	6	5			
	24	9	18	10	14	2/40	2/24	2/30						
	36	10	22	12	16	2/46	2/30	2/36						
	36	11	24	16	18	2/48	2/32	2/40						
	36	12	30	16	24	40	20	26						
	42	14	40	24	36	60	36	45						150
	48	16	50	30	40	75	45	54						
Loop-wheel (jersey stitch)	8		2	1.5	1			3/10						
	10		3	2.5	1.5			3/13						
	12		4	2.5	3.5			2/10						
	14		6	3	5			2/14						

(Continued on next page)

Faults in Circular-Knit Fabrics and Their Remedies *(Continued)*

IV. Underwear and Outerwear *(Continued)*

Machine	Needles Gauge	Cut Needles Inch	Cotton			Worsted			Woolen			Rayon		
			Yarn number			Yarn number			Run			Denier		
			Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal
Loop-wheel (jersey stitch)	16		8	4	6	2/16								
	18		11	5	8	2/20								
	20		13	6	10	2/28								
	22		16	8	12	2/32								
	24		19	10	14	2/40								
	26		22	11	17	2/50								
	28		26	13	20	2/54								
	30		30	15	22	2/60								
	32		34	17	26									
	34		38	19	28									
	36		44	22	32									
	38		48	24	36									
	40		54	26	40									
Latch-needle flat		5	5/10	7/10	6/10	6/18	6/14	3/10						
		6	6/20	9/20	8/20	2/16	2/11	2/12						
		7	5/20	8/20	6/20	2/24	2/12	2/16						
		8	4/20	6/20	5/20	2/28	2/14	2/18	4.5	4	4.5			
		10	2/20	4/20	2/16	2/32	2/22	2/20	5	4.5	5			
		12	2/40	5/40	2/24	2/42	2/26	2/30	6	5	6			

V. Warp Knitting

	Gauge (N.P.I.)	Bars	Cotton			Rayon			Nylon			Worsted		
			Yarn number			Denier			Denier			Yarn number		
			Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal	Minimum	Maximum	Normal
Tricot and milanese	14	1	36	12	16	300	600	600	210	400	400	40	20	30
	14	2	60	36	40	150	300	200	100	300	210	80	40	60
	28	1	100	40	60	40	300	100	40	300	150			
	28	2	100	60	80	40	150	75	12	210	40			
	28	3	100	60	100	40	100	55	12	100	15			
	32	2	120	80	120	40	100	50	12	100	40			
Kay-loom and raschel	12	2	80	18	30	55	300	150	15	300	210	75	30	45
	18	2	80	18	30	45	300	150	15	300	210	75	30	45
Simplex	30	2	120	70	80	45	75	50	15	75	40			
	32	2	120	70	80	45	75	50	15	75	40			

Circular Hosiery Machine and Looper Gauge Relationship

Size of Knitting-Machine Cylinder										Gauge of looper
4 1/4	4	3 3/4	3 1/2	3 1/4	3	2 3/4	2 1/2	2 1/4	2	
Number of Needles in Cylinder										
54	50	48	44	40	38	34		28		5
	52		46	42		36	32		26	5
56	54	50		44	40			30		5
58		52	48			38	34			5
60	56		50	46	42			32	28	5
62	58	54			44	40	36			6
64	60	56	52	48		42	38	34	30	6
66	62	58	54	50	46			36		6
68	64	60	56	52	48	44	40		32	6
70	66	62	58	54	50					6
72	68	64				46	42	38	34	6
74	70	66	60	56	52	48	44			7
76	72	68	62	58	54	50		40	36	7
78	74		64	60			46			7
80	76	70	66		56	52		42	38	7
82		72	68	62	58		48			7
84	78	74	70	64	60	54	50	44	40	7
86	80	76		66		56		46		8
88	82	78	72	68	62		52		42	8
90	84	80	74		64	58		48		8
92	86		76	70			54			8
94	88	82	78	72	66	60		50	44	8
96	90	84	80	74	68	62	56			8
98	92	86			70	64	58	52	46	9
100	94	88	82	76						9
102	96	90	84	78	72	66	60	54	48	9
104	98	92	86	80	74	68				9
106	100	94	88	82			62	56	50	9
108	102	96			76	70	64			10
110	104		90	84	78			58	52	10
112		98	92	86		72	66			10
114	106	100	94	88	80	74		60	54	10
116	108	102	96		82		68	62		10
118	110	104	98	90	84	76	70		56	10
120	112	106		92		78		64		11
122	114	108	100		86		72			11
124	116	110	102	94	88	80		66	58	11
126	118	112	104	96	90	82	74		60	11
128	120	114	106	98				68		11
130	122			100	92	84	76			11
132	124	116	108					70	62	12
134	126	118	110	102	94	86	78			12
136	128	120	112	104	96	88	80	72	64	12
138	130	122	114	106	98	90				12
140	132	124	116				82	74	66	12
142	134			108	100	92				12
144	136	126	118	110	102		84	76	68	13
146	138	128	120	112	104	94	86	78		13
148	140	130	122	114		96			70	13
150		132	124		106		88	80		13
152	142	134		116		98				13
154	144	136	126	118	108	100	90	82	72	14
156	146	138	128	120	110		92		74	14
158	148	140	130		112	102		84		14
160	150		132	122		104	94			14
162	152	142		124	114			86	76	14

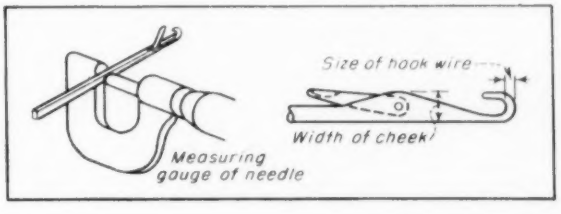
Size of Knitting-Machine Cylinder										Gauge of looper
4 1/4	4	3 3/4	3 1/2	3 1/4	3	2 3/4	2 1/2	2 1/4	2	
Number of Needles in Cylinder										
164	154	144	134	126	116	106	96			14
166	156	146	136	128	118	108	98	88	78	15
168	158	148	138							15
170	160	150	140	130	120	110	100	90	80	15
172	162	152	142	132						15
174	164	154	144		122	112	102	92	82	15
176	166	156	146	134	124	114	104	94		16
178	168	158		136	126				84	16
180	170	160	148	138		116	106			16
182			150		128			96	86	16
184	172	162	152	140	130	118	108	98		16
186	174	164	154	142	132	120	110		88	16
188	176	166		144		122		100		17
190	178	168	156	146	134		112			17
192	180		158		136	124		102	90	17
194	182	170	160	148			114			17
196	184	172			138	126			92	17
	186	174	162	150			116	104		17
198			164	152	140	128				17
200	188	176				130	118	106	94	18
202	190	178	166	154	142					18
204	192	180	168	156	144	132	120	108	96	18
206	194	182	170	158	146	134	122			18
208	196	184	172	160				110	98	18
210	198	186			148	136	124			19
212	200		174	162	150			112	100	19
214		188	176			138	126			19
216	202	190	178	164	152			114		19
	204	192		166		140	128		102	19
218	206		180		154			116		19
220	208	194	182	168		142	130		104	19
222		196		170	156	144				20
224	210	198	184		158		132	118		20
	212		186	172		146			106	20
226	214	200		174	160		134	120		20
228		202	188			148				20
230	216	204	190	176	162		136	122	108	20
232	218			178	164	150				20
234	220	206	192					124	110	21
236	222	208	194	180	166	152	138			21
238										21
	224	210	196	182	168	154	140	126	112	21
240	226	212	198	184	170					21
242	228	214	200			156	142	128	114	21
244	230			186	172					21
246		216	202	188		158	144	130		22
	232	218	204		174	160			116	22
248	234	220		190	176		146	132		22
250	236		206	192		162			118	22
252		222	208		178		148			22
254	238	224		194		164		134		22
256	240	226	210		180		150		120	23
	242		212	196		166		136		23
258	244	228		198	182		152		122	23
260		230	214		184	168		138		23
262	246		216	200		170	154			23

Size of Knitting-Machine Cylinder										Gauge of looper
4 1/4	4	3 3/4	3 1/2	3 1/4	3	2 3/4	2 1/2	2 1/4	2	
Number of Needles in Cylinder										
264	248	232		202	186			140	124	23
266	250	234	218			172	156			23
		236	220	204	188				126	24
268	252		222	206	190	174	158	142		24
270	254	238								24
272	256	240	224	208	192	176	160	144	128	24
274	258	242	226							24
276				210	194	178	162	146		24
	260	244	228	212					130	24
278	262	246	230		196	180	164			25
280	264	248		214	198			148	132	25
282	266		232	216		182	166			25
284		250	234		200	184		150		25
286	268	252		218	202		168		134	25
	270	254	236	220		186		152		25
288	272		238		204		170		136	25
290		256		222		188		154		26
292	274	258	240		206		172			26
294	276		242	224		190			138	26
296	278	260	244	226	208		174	156		26
	280	262			210	192			140	26
298		264	246	228			176	158		26
300	282		248	230	212	194				26
302	284	266					178	160	142	27
304	286	268	250	232	214	196				27
306	288	270	252	234	216	198	180	162	144	27
										27
308	290	272	254	236	218	200	182			27
310	292	274	256					164	146	27
312	294	276		238	220	202	184			28
314			258	240	222			166	148	28
316	296	278	260			204	186			28
	298	280		242	224			168		28
318	300	282	262	244		206	188		150	28
320	302		264		226			170		28
	304	284	266		228	208				28
324		286	268	248		210	190	172	152	29
				250	230		192			29
328	308		270			212			154	29
	310	290		252	232			174		29
330	312	292		254	234	214	194	176	156	29
334				256	236	216				29
336	316	296	276					178	158	30
338	318	298	278	258	238	218	198			30
340	320	300	280	260	240	220	200	180	160	30
										30
342	322	302	282	262	242	222				30
344	324	304	284	264	244		202	182	162	30
346	326	306				224	204			31
348			286	266				184		31
	328	308	288		246	226			164	31
	330	310	290	268	248	228	206			31
		312		270						31
	334				250					31
		314		272		230				31
	338	316	294	274	252	232				32

Size of Knitting-Machine Cylinder										Gauge of looper
4 1/4	4	3 3/4	3 1/2	3 1/4	3	2 3/4	2 1/2	2 1/4	2	
Number of Needles in Cylinder										
		318	296		254					32
	340			276		234				32
		320	298		256					32
	344	322	300	278	258	236				32
			302	280						32
		324			260	238				32
	348	326	304	282						33
	350	328	306	284	262	240				33
						242				33
	352	330	308	286	264					33
		332	310							33
	356	334	312	288	266	244				33
	358			290	268	246				33
		336	314	292						34
	360	338			270					34
		340	316	294	272	248				34
	364		318	296		250				36
					274					36
	366	344	320	298		252				36
		346	322	300	276					36
	370		324		278	254				36
				302						36
			326			256				36
	374	350	328	304	280	258				36
				306	282					36
	378	354	330			260				36
			332	308	284					36
	380	356		310	286					36
	384	360	336	312	288					36
	386	364		314	290					38
			340	316	292					38
	390									38
			342	318	294					38
	394	368		320						38
		370	346							38
	396	372		322						38
	398				298					38
	400		350	324	300					38
	402	376		326						38
					302					38
	404		354	328						38
		380	356	330	304					38
	408				306					38
		384		332						38
	410				308					40
	412		360	334	310					40
		388	362	336						40
	416	390	364	338	312					40
				340	314					40
	420	394	368	342	316					40
										40
			370	344						40
	424	398	372	346	318					40
		400			320					40
	428		374	348						42
		402			322					42

How To Gauge a Latch Needle

Without special tools and fixtures, it is not possible to gauge accurately the over-all length and some other of the long dimensions of latch needles. Most variations, however, are found in the hook end of the needle and can be measured with a standard micrometer as shown here.



Spreading Knitted Fabrics

Useful tables aid in obtaining correct cloth width for minimum shrinkages, as developed by F. J. Quilitzsch. Variations due to varying tension and yarn character must be recognized and due allowance made.

A good deal of the shrinkage in knitted underwear may be traced to improper spreading. If fabric is spread the wrong width, the stitches will be distorted. When a garment made from such a fabric is washed, the stitches will go back to their normal positions and cause the garment to shrink in length or width. Therefore, the fabric should be knitted on machines that produce a width as near as possible to the pattern width. This width will help eliminate shrinkage caused by stitch distortion and will make a fabric more uniform in appearance and feel.

In spreading ribbed underwear fabric, the size of the yarn and cut and diameter of the machine should be considered. The width of the fabric is equal to four times the diameter of the yarn multiplied by half the needles.

The accompanying tables are an aid to determine the width to spread different fabrics. Suppose it is desired to determine what size to spread fabric knitted on a 16-in., 12 cut machine, with 20s yarn. First, look down the column headed machine diameter, on the 12-cut table, to the 16-in. dia.; then look horizontally over to column headed 20 for the approximate size to spread the fabric.

11 Cut
Yarn Nos.

Machine diameter (ins.)	14	16	18	20	22	24	26
7	6½	6½	6	5½	5½	5	5
8	7½	7	6½	6	6	5½	5½
9	8½	8	7½	7	6½	6½	6
10	9½	9	8½	8	7½	7	7
11	10½	10	9	8½	8½	8	7½
12	11½	10½	10	9½	9	8½	8½
13	12½	11½	11	10	10	9½	9
14	13½	12½	12	11	10½	10	10
15	14½	13½	13	12	11½	11	10½
16	15½	14½	13½	12½	12½	12	11½
17	16½	15½	14½	13½	13	12½	12
18	17½	16½	15½	14½	14	13½	13
19	18½	17½	16½	15	14½	14	13½
20	19½	18	17	16	15½	15	14½
21	20½	19	18	17	16½	15½	15
22	21½	20	19	17½	17	16½	16
23	22½	21	20	18½	18	17	16½
24	23½	22	21	19½	19	18	17
26	25	23½	22½	20½	20	19	18½
28	27	25½	25	22½	21½	21	20

9 Cut
Yarn Nos.

Machine diameter (ins.)	8	10	12	14	16	18	20
7	7	6½	6	5½	5	5	4½
8	8	7½	7	6	6	5½	5
9	9½	8½	7½	7	6½	6	6
10	10½	9½	8½	8	7½	7	6½
11	11½	10½	9½	8½	8	7½	7
12	12½	11	10	9½	9	8½	8
13	13½	12	11	10	9½	9	8½
14	14½	13	12	11	10	9½	9
15	15½	14	12½	12	11	10½	9½
16	17	15	14	13	12	11	10½
17	18	16	14½	13½	12½	12	11
18	19	17	15½	14½	13½	12½	12
19	20	18	16½	15	14	13½	12½
20	21	18½	17	16	15	14	13
21	22	20	18	17	15½	15	14
22	23	20½	19	17½	16½	15½	14½
23	24	21½	19½	18	17	16	15
24	25	22½	20½	19	17½	16½	15½
26	27	24	22	20½	19	18	17
28	29½	26	24	22	20½	19½	18

12 Cut
Yarn Nos.

Machine diameter (ins.)	18	20	22	24	26	28	30
7	6½	6	6	5½	5½	5	5
8	7½	7	6½	6½	6	6	5½
9	8½	8	7½	7	7	6½	6½
10	9½	9	8½	8	8	7½	7½
11	10½	9½	9½	9	8½	8½	8
12	11½	10½	10	9½	9½	9	8½
13	12	11½	11	10½	10	9½	9½
14	13	12	12	11½	11	10½	10
15	14	13	12½	12	11½	11	11
16	15	14	13½	13	12½	12	11½
17	16	15	14½	14	13½	13	12½
18	17	15½	15½	14½	14	13½	13
19	18	16½	16	15½	15	14½	14
20	19	17½	16½	16	15½	15	14½
21	19½	18	17½	17	16½	15½	15
22	20½	19	18½	17½	17	16½	16
23	21½	20	19½	18½	18	17	16½
24	22½	21	20	19	18½	18	17
26	24	22½	21½	21	20	19½	18½
28	26	24	23½	22½	21½	21	20

10 Cut
Yarn Nos.

Machine diameter (ins.)	10	12	14	16	18	20	22
7	7	6½	6	5½	5½	5	5
8	8½	7½	7	6½	6	6	5½
9	9½	8½	8	7½	7	6½	6½
10	10½	9½	9	8	7½	7	7
11	11½	10½	10	9	8½	8	8
12	12½	11	10½	9½	9	8½	8½
13	13½	12½	11½	10½	10	9½	9
14	14½	13	12	11½	10½	10	9½
15	15½	14	13	12½	11½	11	10½
16	16½	15	14	13	12½	11½	11
17	17½	16	15	14	13	12	12
18	18½	17	16	15	14	13	12½
19	20	18	17	15½	15	14	13½
20	20½	19	17½	16½	15½	14½	14
21	22	20	18½	17	16½	15	14½
22	23	21	19½	18	17	16	15½
23	24	22	20	19	18	16½	16
24	25	23	21	20	18½	17½	17
26	27	24½	23	21½	20	19	18
28	29	26½	24½	23	21½	20	19½

13 Cut
Yarn Nos.

Machine diameter (ins.)	22	24	26	28	30	32	34
7	7	6½	6½	6	6	6	5
8	8	7½	7	7	6½	6½	6
9	9	8½	8	8	7½	7½	6½
10	10	9½	9	9	8½	8	7½
11	11	10	10	9½	9	9	8
12	12	11	11	10½	10	10	9
13	13	12	12	11½	11	10½	9½
14	13½	13	12½	12	11½	11	10½
15	14½	14	13½	13	12½	12	11
16	16	15	14½	13½	13	13	11½
17	16½	16	15	14½	14	14	12½
18	17½	17	16	15½	15	15	13
19	19	18	17	16½	16	15½	14
20	19½	19	18	17½	17	16	14½
21	20½	20	19	18½	17½	17	15½
22	21½	21	20	19	18½	18	16
23	22½	21½	20½	20	19½	18½	17
24	23½	22½	21½	21	20	19½	17½
26	25½	24½	23½	22½	22	21	19
28	27½	26½	25½	24½	23½	23	20½

14 Cut Yarn Nos.							
Machine diameter (ins.)	26	28	30	32	34	36	38
7	6½	6	6	6	5½	5½	5½
8	7	7	6½	6½	6	6	6
9	8	8	7½	7½	7	7	6½
10	9	9	8½	8	8	7½	7½
11	10	9½	9	9	8½	8½	8
12	11	10½	10	10	9½	9	9
13	12	11½	11	10½	10½	10	10
14	12½	12	11½	11½	11	10½	10½
15	13½	13	12½	12	12	11½	11
16	14½	14	13½	13	12½	12½	12
17	15	14½	14	14	13½	13	12½
18	16	15½	15	14½	14	14	13½
19	17	16½	16	15½	15	14½	14½
20	18	17½	17	16	15½	15½	15
21	19	18½	17½	17	16½	16	15½
22	20	19	18½	18	17½	17	16½
23	20½	20	19½	18½	18	17½	17
24	21½	21	20	19½	19	18½	18
26	23½	22½	22	21	20½	20	19½
28	25½	24½	23½	22½	22	21½	21

15 Cut Yarn Nos.							
Machine diameter (ins.)	30	32	34	36	38	40	42
7	6	6	6	5½	5½	5½	5
8	7	7	6½	6½	6½	6	6
9	8	8	7½	7½	7	7	7
10	9	8½	8½	8	8	7½	7½
11	10	9½	9½	9	9	8½	8½
12	11	10½	10	10	9½	9½	9
13	11½	11½	11	10½	10½	10	10
14	12½	12	12	11½	11	11	10½
15	13½	13	12½	12½	12	11½	11½
16	14½	14	13½	13	13	12½	12
17	15½	15	14½	14	13½	13½	13
18	16½	16	15½	15	14½	14	14
19	17	16½	16	15½	15½	15	14½
20	18	17½	17	16½	16	15½	15½
21	19	18½	17½	17	16½	16½	15½
22	20	19½	18½	18	17½	17	16½
23	21	20	19½	18½	18	17½	17
24	22	21	20½	20	19½	19	18½
26	23½	22½	22	21½	21	20½	20
28	25	24½	23½	23	22½	22	21½

16 Cut Yarn Nos.							
Machine diameter (ins.)	36	38	40	42	44	46	48
7	6	6	6	5½	5½	5½	5½
8	7	7	7	6½	6½	6½	6
9	8	8	7½	7½	7	7	7
10	9	8½	8½	8	8	8	7½
11	9½	9½	9	9	8½	8½	8½
12	10½	10½	10	10	9½	9½	9½
13	11½	11	11	10½	10½	10	10
14	12½	12	11½	11½	11	11	10½
15	13	13	12½	12	12	11½	11½
16	14	13½	13½	13	12½	12½	12
17	15	14½	14	14	13½	13	13
18	15½	15½	15	14½	14	14	13½
19	16½	16	15½	15½	15	14½	14½
20	17½	17	16½	16½	16	15½	15
21	18½	18	17½	17	16½	16½	16
22	19½	19	18½	18	17½	17	16½
23	20	19½	19	18½	18	18	17½
24	21	20½	20	19½	19	18½	18
26	23	22	21½	21	20½	20	20
28	24½	24	23	22½	22	21½	21½

Knitting-Room Production Formulas

Average circular knitting machine cylinder speeds:

$$\text{Multifeed jersey machines: rpm.} = \frac{560}{\text{dia.}}$$

$$\text{Rib and interlock machines: rpm.} = \frac{688}{\text{dia.}}$$

$$\text{Loop-wheel machines: rpm.} = \frac{1000}{\text{dia.}}$$

$$\text{100\% production (lbs. per shift)} = \frac{F \times N \times S \times R \times 60 \times 8}{36 \times Y \times H}$$

$$\text{100\% production (yds. per shift)} = \frac{F \times R \times 60 \times 8}{C \times 36}$$

$$\text{Weight of fabric per sq. yd.} = \frac{W \times C \times L \times 36}{Y \times H}$$

Where F = Feeds in operation
N = Number of needles knitting
S = Length of stitch in inches
R = Revolutions per minute
Y = Yarn number
H = Hank length (840 or 560)
C = Courses per inch
W = Wales per inch

Production From Rib Machines

This table is correct if the machines are run at the speeds recommended in the table and are knitting a normal stitch, which is 1 ft. of yarn for 4 ins. of needles. If the stitch is longer than normal, the production will be proportionately more, and vice versa.

This table gives the production for 10 hrs. actual running time, but under the best conditions knitting machines can be run only 85 to 90% of the time because of stops. In estimating production, the above figures should be reduced 10 to 15%.

Pounds of Fabric in 10 Hrs. Actual Running Time *(For higher number of feeds, increase proportionately)*						
Cotton numbers	Worsted or Mohair numbers	1 feed	2 feeds	4 feeds	8 feeds	12 feeds
1	1.5	134	269	538	1076	1614
2	3.0	67	134	269	538	807
3	4.5	45	89	179	358	537
4	6.0	33	67	134	269	403
5	7.5	27	54	107	215	322
6	9.0	22	45	89	179	268
7	10.5	19	38	77	154	231
8	12.0	17	33	67	134	201
9	13.5	15	30	60	119	179
10	15.0	13	27	54	107	161
11	16.5	12	24	49	98	147
12	18.0	11	22	45	89	134
13	19.5	10	21	41	82	123
14	21.0	9.6	19	38	77	115
15	22.5	9.0	18	36	72	108
16	24.0	8.4	17	34	67	101
17	25.5	7.9	16	32	63	95
18	27.0	7.4	15	30	60	90
19	28.5	7.0	14	28	56	84
20	30	6.7	13	27	54	81
22	33	6.1	12	24	49	73
24	36	5.6	11	22	45	67
26	39	5.2	10	21	41	62
28	42	4.8	9.6	19	38	57
30	45	4.48	9.0	18	36	54
32	48	4.2	8.4	17	34	51
34	51	3.96	7.9	16	32	48
36	54	3.74	7.4	15	30	45
38	57	3.54	7.0	14	28	42
40	60	3.36	6.7	13	27	40
42	63	3.20	6.4	12.8	26	39
44	66	3.05	6.1	12.0	24	36
46	69	2.92	5.8	11.7	23	35
48	72	2.80	5.6	11.0	22	33
50	75	2.69	5.4	10.7	21.5	32

Courtesy Wildman Mfg. Co.

Faults in Circular-Knit Fabrics and Their Remedies

I Latch-Needle Sinker-Top Machines

Fault	Cause	Remedy
Vertical lines in fabric	Bent needles	Straighten needles between finger and thumb
	Stiff sinkers	Work out slots with knife blade
	Stiff needles	Straighten cylinder slots
	Wrong-type needles	Replace with all one type; check needle length, butt, hook size and spoon size
	Dirt in sinker slots causing sinkers to ride high	Remove sinkers and clean out with thin blade
	Stiff latches	Bend latch until free, or replace needle
	Dirt in slots	Remove all needles and sinkers, clean slots with brush soaked in cleaning solvent, wipe dry, and spray with needle oil
	Worn sinker tops	Replace with new sinkers
	Spoons not covering hook	Replace needle
Horizontal lines in fabric	Wrong yarn number on one or more feeds	Run color in one feed, and count courses to faulty line
	Uneven yarn	Check yarn on blackboard
	Too much tension on one or more yarns	Check all tensions and threading up of yarns; see that guides are not clogged with lint
	Uneven stitch length	Mark all yarns at the cone and turn machine until the marks reach the yarn carriers. Lower the stitch cams on high marks, and raise cams on low marks
	Loose stitch cam	Check screws for serviceability and tighten
	Wrong twist on one or more yarns	Check Z or S twist by turning yarn between the fingers
	Too much or too little twist in one or more yarns	Check yarns for turns per inch with twist tester
	Take-up not working correctly	Adjust so that a steady pull is obtained
Holes and cutting	Stitch drawn too tight	Lower stitch cams or raise cylinder

Fault	Cause	Remedy
Holes and cutting *Continued*	Slub or lint caught in yarn guide	Blow out guides more frequently
	Stitch drawn too tight	Lower stitch cams or raise cylinder
	Slub or lint caught in yarn guide	Blow out guides more frequently
	Weak places in yarn	Rewind yarn under tension
	Bad knots and slubs in yarn	Rewind yarn through slub catcher
	Stitch too long	Raise stitch cams
	Stiff latch	Replace needle
	Sinkers pushing in too soon	Retard sinker timing
	Too-heavy or too-fine yarn numbers	Use cotton yarn numbers equivalent to $\frac{cut^2}{20}$
	Machine running too fast	Reduce speed to $\frac{560}{dia.}$ for multifeed jersey machines
	Sinkers delayed too much, causing loops to catch in crutch of latch	Advance sinkers slightly
	Yarn carriers set at an angle so that needle hooks puncture yarn	Adjust carriers so that yarn is fed correctly
	Rough edge on sinker	Replace sinker
	Rough or worn place on yarn guides or thread carrier	Polish with fine emery cloth
	Yarn catching on stop motion or other obstruction	Check all yarns for correct threading
	Stop-motion tensions too great	Use as little tension as possible
Press-offs	Stop motions not set correctly	Adjust stop motions so that machine stops and leaves enough yarn to be tied back to the cone when yarn is cut at the cone
	Machine running fast	Raise stop motion by using higher bobbin pole

(Continued on next page)

I Latch-Needle Sinker-Top Machines (continued)

Fault	Cause	Remedy
Press-offs *Continued*	Bad knots and slubs	Rewind yarn through slub catcher, or use small spider porcelains. See that top stop motions work when wire is pulled down
	Lint caught in thread guide	Blow off machine every 30 mins.
	One or more yarn carriers loose or improperly set	Adjust carriers so that yarn is fed into the needle hooks

Fault	Cause	Remedy
Drop-stitches	Too little tension on yarns	Apply more tension on bottom stop motion
	Yarn carriers improperly set	Set carriers as close to needles as possible without touching
	Stiff latch	Replace needle
	Machine running too fast	Reduce speed to $\frac{560}{\text{dia.}}$ for multifeed jersey machines

II Loop-Wheel Machine (Tompkins and Crane)

Fault	Cause	Remedy
Vertical lines in fabric	Needles bent out of cylinder radius	Plier to perfect circle
	Needles bent to one side	Plier needles equidistant
	Needle beard is too close to eye, causing tuck stitches	Replace the needle
	Needle is bent in, causing insufficient press	Plier needle outwards
	Needle is loose in lead or slot	Replace the lead, or renew the leather on the needle clamp
	Blocked backing burr set too high	Introduce colored yarn to find offending feed. Set burr to lower position
Horizontal lines in fabric	Yarn guide clogged with lint	Clean off guide, and blow down more regularly
	Wrong yarn number on one or more feeds	Weigh 120 yds. of suspected yarn, and check number
	Wrong twist in one or more yarns	Check yarns for direction and amount of twist
	Uneven yarns	Find a new yarn supplier
	Yarn not sitting below center of eye	Position cones 16 ins. below center of eyes
	Yarn wrapped around burr bracket	Check all yarns for identical threading
	One or more sinker burrs too far in, too far out, or at an incorrect angle	Adjust burrs to draw an identical length of stitch
	Cast-off burr not high enough on one or more feeds	Raise burr to lift stitches over heads of the needles

Fault	Cause	Remedy
Tuck stitches	Presser shoe not in far enough	See that spring is not binding and keeping presser blade away from needles
	Cast-off blade broken	Insert new blade
	Clearer burr set too low	Raise burr to allow loops to be landed as beards are pressed
	Fabric wheel or shoe set too far away from presser	Loops should not be allowed to rise until beards are closed
	Too little tension on fabric	Add tension until loops slide over the needle heads
	Cast-off burrs not high enough	Raise burrs to a position where loops will be cast off
	Too tight a stitch	Push in sinker burrs
	Use of a combination burr	Reduce feed points, and use a clearer and cast-off
	Needles not concentric in cylinder	Check needle-head circumference with a string from the center post
	Loose needles in lead	Replace the lead
	Too-heavy yarn	Use cotton yarn number equivalent to $\frac{\text{gauge}^2}{28}$
	Dry yarn	Run yarn through emulsion during winding
Holes and cuts	Cast-off burr is set too high	Lower cast-off to just cast the loops off
	Too much tension on the fabric	Slacken tension slightly
	Stitch too tight	Push in sinker burrs
	Bad knots and slubs in yarn	Rewind the yarn through a slub catcher

(Continued on next page)

II Loop-Wheel Machine (Tompkins and Crane) (continued)

Fault	Cause	Remedy
Holes and cuts *Continued*	Sinker burr catching on needles	Adjust to correct position
	Nicks in burrs	Take one feed at a time out of action until fault is cleared. Examine all burrs on faulty feed
	Shoe is set too low	Set shoe in level position so that there is no excessive tension on the heel part
	Lander catching on shoe	Move shoe forward
	Thin places in yarn	Wind yarn under tension
	Too much tension on yarn	Check tension devices for correct threading and clogging of lint
	Rough surface on burr bracket or yarn guides	Polish with emery cloth
	Needle beards not in line with eye	Replace with new needle, or plier needle beard
Holes and cuts *Continued*	Clearer cuts the stitch on the lead or the cylinder	Raise clearer burr
Drop stitches	Presser set too far away from the sinker burr	Move sinker as close to presser as possible
	Wiry yarn	Wind yarn through emulsion or wax
	Insufficient tension on yarn	Run yarn around burr bracket
	Sinker burr clogged with lint, closing needle beard	Clean sinker burr
	Needle beard bent too far toward eye	Fit new needle
	Yarn running out of sinker nib	Adjust yarn guide closer to burr blades, or fit blades with larger nibs

III Rib and Interlock Machines

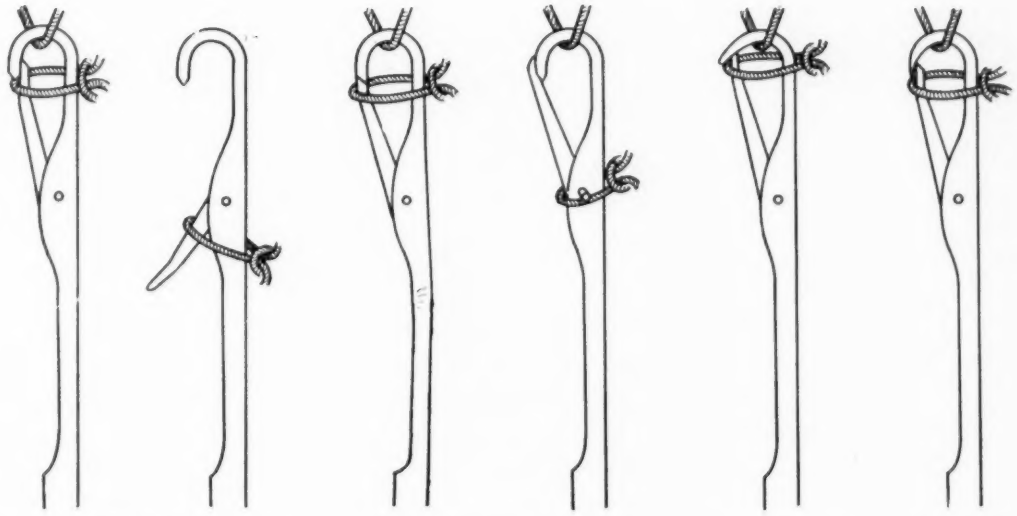
Fault	Cause	Remedy
Vertical lines in fabric	Faulty needle (see sketch)	Replace the needle
	Bent needles	Straighten needle between finger and thumb
	Dogs too tight	Adjust dogs so that all dogs are equidistant
	Dirty needles and slots	Flush out cylinder and dial with needle oil, run machine with cheap yarn, remove and wipe cam boxes clean, and repeat process until cloth is clean
	Gating off center	Adjust gating so that dial needles are positioned midway between the cylinder needles when fabric is on machine
Horizontal lines in the fabric	Wrong yarn number on one or more feeds	Find offending feed by running a colored yarn and counting the courses
	Uneven stitch length	Even up cylinder stitch cams by marking yarn on cone, turning machine, and raising stitch cams on feeds whose marks reach the yarn carrier first
	Dial not horizontal	Check dial surface with dial-test indicator fixed to the top-bed plate. Adjust dial by packing shims under the dial-yoke pillars
Horizontal lines in fabric *Continued*	Cylinder not square with dial	Check with feeler gauge between dial and cylinder. See that cylinder is seated correctly
	Dial or cylinder oval	Check with dial-test indicator fixed to bed plate, and rotate cylinder
Tuck stitches	Dial stitch cams not pulled in far enough	Adjust cams to cast off their stitches
	Not enough tension on fabric	Adjust take-up rolls to give more tension
	Not enough gap between dial and cylinder	Raise dial
	Too-heavy yarn number	Use yarn equivalent to $\frac{cut^2}{9}$ for cotton yarns
	Yarns too dry	Increase relative humidity to 60%
	Machines not warm enough (usually occurs on Monday morning)	Retain heat in mill during the week end
	Dogs not set correctly	Adjust dogs so that all dogs take an equal load
	Fabric slipping at one end of take-up rolls	Adjust take-up rolls to even pressure

(Continued on next page)

III Rib and Interlock Machines (continued)

Fault	Cause	Remedy
Tuck stitches *Continued*	Faulty needles (See sketch)	Replace needles
Drop stitches	Dial and cylinder timing out, causing dial latches to close before yarn gets into hooks	Retard dial cast-off position
	Insufficient tension on yarn	Fit a tension disk to yarn carrier
	Yarn carrier set too far away from needles	Set carrier as close to needles as possible without touching
	Yarn carrier set too high	Allow the thickness of a dial needle between dial needles and bottom of carrier
	Yarn carrier set too far forward	Move carrier to a position to feed yarn into hooks
Holes	Insufficient tension on the fabric, causing yarn to become trapped in crutch of latch because latch is not opened soon enough	Adjust take-up rolls
	Too much tension on the fabric	Adjust take-up rolls

Fault	Cause	Remedy
Holes *Continued*	Too much cast-off on dial needles	Set cams so that needles merely cast off their stitches
	Dial too low	Allow the thickness of a cylinder needle between the dial and cylinder
	Cylinder stitch cam drawing too long a loop	Raise cylinder stitch cams
	Yarn plucking under the base of the cone	Rewind yarn
	Bad knots, slubs, and thin places in the yarn	Rewind yarn under tension through a slub catcher
	Cone not sitting under porcelain	Position cone directly under center of porcelain
	Lint clogged in yarn guide	Clean out yarn guide; blow off more regularly
	Yarn meeting some obstruction or sharp corner	Check passage of yarn from cone to needles while machine is running
	Gating not correct	Adjust gating so that cylinder needles are in center of dial needles
	Stitch too tight	Raise dial, or lower cylinder stitch cams



Worn or bent latches — Stiff latches — Bent needles — Loose rivets — Opened-out hooks — Worn hooks

These needle faults will cause tuck stitches.

Key to Needle-Numbering System

Torrington latch needles have been divided into eight general classifications:

100 to 999 – Circular spring beard
1000 to 4999 – Regular Hemphill-type solid butt
5000 to 9999 – Miscellaneous solid butt
1000C to 9999C – Regular cylinder needles
1000D to 9999D – Regular dial needles
1000E to 9999E – Double-end needles
1000F to 9999F – Flat-machine needles
1000H to 9999H – Miscellaneous wire needles

C – identifies cylinder needles
D – identifies dial needles
E – identifies double-end needles
F – identifies flat-machine needles
H – identifies miscellaneous needles that do not come within the other classifications

Hemphill-Type Solid-Butt Needles

24 gauge and coarser – 1000 to 1499
36 gauge – 1500 to 1999
48 gauge – 2000 to 2499
54 gauge – 2500 to 2999
60 gauge – 3000 to 3299
70 gauge – 3300 to 4999

Miscellaneous Solid-Butt Needles

12 gauge and coarser – 5000 to 5099
18 gauge – 5100 to 5299
24 gauge – 5300 to 5499
36 gauge – 5500 to 5999
42 gauge – 6000 to 6299
48 gauge – 6300 to 6799
50 gauge and 54 gauge – 6800 to 7299
60 gauge – 7300 to 7699
70 gauge – 7700 to 8999
80 gauge and finer – 9000 to 9999

All Wires Butt Classifications
(when followed by a classification letter)

10 gauge and coarser – 1000 to 1999
12 gauge – 2000 to 2999
18 gauge – 3000 to 3999
24 gauge and 30 gauge – 4000 to 4999
36 gauge – 5000 to 5999
42 gauge – 6000 to 6999
48 gauge – 7000 to 7999
50 gauge and 54 gauge – 8000 to 8999
60 gauge and finer – 9000 to 9999

Heights of butts are designated by the following suffixes:

L – Long butt
S – Short butt
B – Short .280 butt
M – Medium .338 butt
X – Extra-short .255 butt

BA	.500 butt	LL	.355 butt
BB	.495 butt	LM	.350 butt
BC	.490 butt	LN	.345 butt
BD	.485 butt	MS	.330 butt
BE	.480 butt	MT	.325 butt
BF	.475 butt	N	.320 butt
BH	.470 butt	NF	.315 butt
BJ	.465 butt	NL	.310 butt
BK	.460 butt	NM	.305 butt
BL	.455 butt	P	.300 butt
BM	.450 butt	PB	.295 butt
BN	.445 butt	SD	.285 butt
BP	.440 butt	T	.275 butt
BS	.435 butt	TJ	.265 butt
BT	.430 butt	TK	.260 butt
BU	.425 butt	XM	.250 butt
BV	.420 butt	XN	.245 butt
BW	.415 butt	Y	.240 butt
BX	.410 butt	YS	.235 butt
BY	.405 butt	YT	.230 butt
BK	.400 butt	YU	.225 butt
KB	.395 butt	Z	.220 butt
LD	.385 butt	ZF	.215 butt
LE	.380 butt	ZL	.210 butt
LF	.375 butt	ZM	.205 butt
LH	.370 butt	ZN	.200 butt
LJ	.365 butt	ZO	.190 butt
LK	.360 butt	ZP	.180 butt

Rivetless-type needles are indicated by the suffix "R"

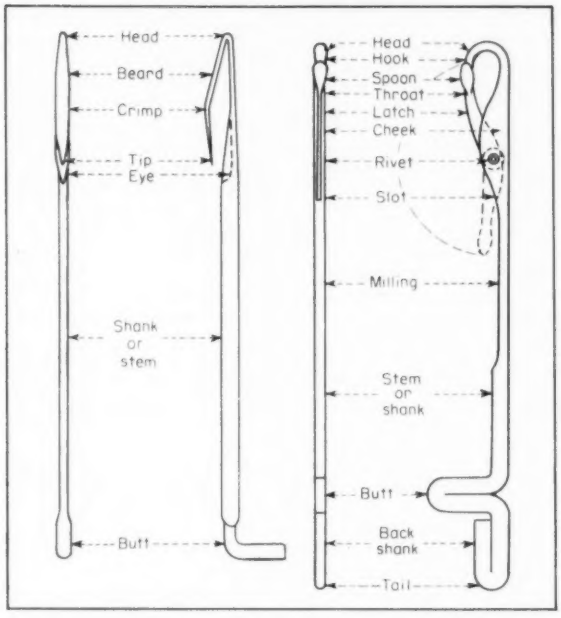
The following table should be used for determining the gauges of needles –

.090 ins. or coarser	2½ gauge	.025 to .028	42 gauge
.070 to .090	4 gauge	.023 to .025	48 gauge
.064 to .074	8 gauge	.021 to .023	50 gauge
.057 to .064	10 gauge	.020 to .021	54 gauge
.048 to .056	12 gauge	.019 to .020	60 gauge
.041 to .047	18 gauge	.016 to .0165	70 gauge
.033 to .035	24 gauge	.013 to .0135	75 gauge
.030 to .033	30 gauge	.0115 to .0120	80 gauge

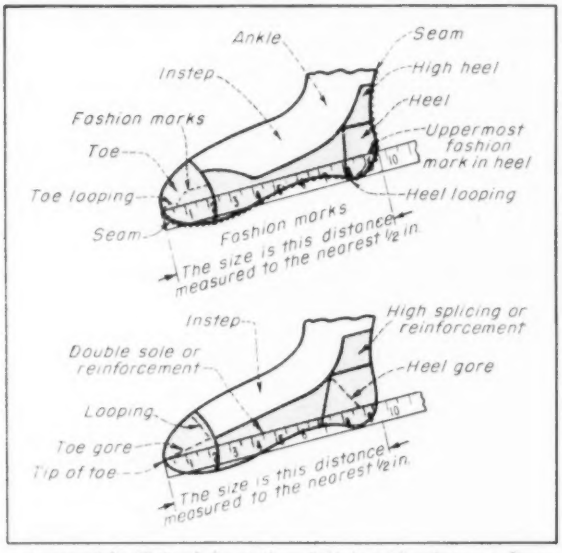
Number of Needles in Circular-Machine Cylinders

Dia. of machine (ins.)	Needles per inch																						
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30
7	44	66	88	110	132	154	176	198	220	242	262	286	308	330	352	376	396	418	444	486	528	570	618	660
8	50	76	100	126	152	176	200	226	252	278	304	326	352	378	400	428	452	478	504	558	606	648	708	756
9	56	86	114	142	172	198	228	254	284	314	344	368	396	424	456	480	508	538	564	630	684	732	792	846
10	62	94	126	156	188	220	252	282	312	344	376	408	440	470	504	534	564	596	624	696	756	816	882	936
11	68	104	138	174	208	242	276	312	348	380	416	450	484	516	552	588	624	656	684	762	834	900	966	1032
12	76	114	150	188	228	264	300	340	376	416	456	490	528	568	604	640	680	716	756	832	912	984	1056	1134
13	82	122	164	204	244	286	328	368	408	448	488	532	572	612	656	696	736	776	816	894	984	1062	1146	1224
14	88	132	176	220	264	308	352	396	440	480	528	572	616	660	704	752	792	828	876	960	1056	1140	1236	1330
15	94	142	188	234	284	330	376	424	468	516	568	612	660	704	752	800	848	896	938	1032	1134	1224	1320	1416
16	100	152	200	252	304	352	480	452	504	552	608	652	704	756	804	856	904	956	1008	1104	1212	1302	1410	1512
17	106	160	214	266	320	374	428	480	532	588	640	696	748	800	856	900	960	1016	1068	1170	1284	1386	1500	1608
18	114	170	226	282	340	396	452	508	564	628	680	736	792	848	904	960	1016	1076	1128	1236	1356	1470	1584	1698
19	120	180	240	298	360	418	480	536	596	658	720	776	836	896	956	1016	1072	1136	1200	1302	1434	1554	1674	1794
20	126	188	252	314	376	440	504	564	628	688	752	816	880	940	1008	1068	1128	1192	1260	1368	1506	1632	1764	1884
21	132	198	264	330	396	462	528	594	660	724	792	856	924	992	1056	1120	1184	1256	1320	1440	1584	1710	1848	1980
22	138	208	276	350	416	484	552	624	700	760	832	900	968	1036	1104	1176	1244	1312	1380	1512	1656	1794	1938	2072
23	144	216	290	362	432	506	580	648	724	796	864	940	1012	1084	1160	1228	1300	1372	1449	1578	1728	1878	2028	2168
24	150	226	302	378	452	528	604	680	756	832	904	980	1056	1140	1208	1280	1360	1432	1500	1650	1806	1962	2112	2274
26	164	244	328	408	488	572	656	736	816	896	976	1064	1144	1224	1312	1392	1472	1552	1632	1794	1956	2124	2288	2448
28	176	264	352	440	528	616	704	792	880	960	1056	1154	1232	1320	1408	1504	1594	1656	1752	1932	2112	2280	2466	2634
30	188	284	376	468	568	660	752	848	936	1032	1136	1224	1320	1408	1504	1600	1696	1792	1916	2072	2268	2448	2640	2824

Parts of Needles



Standard for Measuring Hosiery



Approved by National Association of Hosiery Manufacturers, Bureau of Standards, Textile Committee of Federal Specifications Board, and American Home Economics Association.

Needle aand Sinker Thickness For Underwear and Outerwear Machines

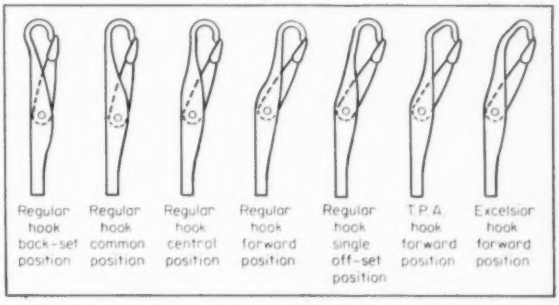
Gauge	Thickness of needle (in.)	Thickness of sinker (in.)
12	.048	.040
18	.0415	.025
24	.035	.020
36	.029	.015
42	.024	.010
50	.020	.010
70	.016	.005/.010

Data on Latch-Needle Ribbers

This table is designed to give average figures for latch-needle ribbers. The speed is dependent upon the diameter of the machine and varies inversely with it. The weight and floor space vary with the size of the machine, but, as cylinders of different diameters are set on one size of frame, one weight and one set of floor-space dimensions serve for several diameters. In the smaller machines, the differences in the power requirements are so slight that all machines up to 6 ins. in diameter are considered together. From 6 ins. up, the varying diameters and the additional feeds tend to make a more noticeable difference in the power required.

Dia. (ins.)	Rpm.	Weight (lbs.)	Floor space (ins.)	Hp.
1/2	1,000			
3/4	660			
1	500			
1 1/4	400			
1 1/2	330	110	20 x 22	
1 3/4	285			
2	250			
2 1/4	240			
2 1/2	220			
2 3/4	200			
3	190			1/8 to
3 1/4	180			1/6
3 1/2	170			
3 3/4	160			
4	150	155		
4 1/4	142	195	22 x 27	
4 1/2	137			
4 3/4	125			
5	120			
5 1/4	115			
5 1/2	110	195	24 x 30	
6	105			
7	100	403		
8	90	411	25 x 48	1/5
9	80	418		
10	72	471		
11	65	480	28 x 51	1/4
12	60	489		
13	55	536		
14	50	551	31 x 54	1/3
15	47	566		
16	45	626		
17	42	640	35 x 57	1/2
18	40	654		
19	38	719		
20	36	735	39 x 60	2/3
21	34	741		
22	33	811		
23	31	820	43 x 60	3/4
24	30	830		
26	27	1,150	47 x 66	
28	25	1,200	51 x 70	
30	24	2,000		
33	22	2,050	60 x 66	
36	20	2,100		

Types of Latch-Needle Hooks


Regular hook back-set position
Regular hook common position
Regular hook central position
Regular hook forward position
Regular hook single off-set position
T.P.A. hook forward position
Excelsior hook forward position

Removing Oil Stains From Gray Goods

The following list of "safe" and "unsafe" chemicals for removing oil stains from cotton and rayon gray goods was prepared by a committee from the National Association of Finishers of Textile Fabrics cooperating with the American Association of Textile Chemists and Colorists.

Classified as "safe" are the following compounds:

Sulfonated castor oil

Red oil (see below)

Soap (olive oil, red oil, tallow, pine oil)

Sodium acid fluoride (to remove iron rust)

Oxalic acid, washed out immediately after use (to remove iron rust)

Solvents: Tetralin, hexalin, chloroform, carbon tetrachloride, naphtha (to be used either alone or in connection with soaps and sulfonated oils)

Note: Other organic solvents could doubtless be found that would work equally well.

A typical "spot wash" is made as follows:

White castile soap	10½ lbs.
Chloroform	½ lb.
Ammonia 26° Be.	3 lbs.
Total (with water)	300 lbs.

The use of red oil (oleic acid) is based on the principle that when mineral-oil stains are covered with red oil and the cloth is kier boiled, the caustic in the kier combines with the red oil locally to form soap, which emulsifies the mineral oil.

Classified as "unsafe" are the following compounds:

Amyl acetate

Unsaponifiable oil or wax emulsions

Linseed oil or other difficultly saponifiable oils, or preparations containing same

Acids (except oxalic acid)

Alkalis (except ammonia)

Oxalic acid (if not washed out promptly)

Hygroscopic substances that may develop mildew if goods are stored

The committee issued the following precautionary remarks in reference to use of oil removers:

1. Oil removers should contain no free alkali except ammonia.
2. They should be applied by sponging and without rubbing.
3. All oil removers should be capable of being entirely removed during the regular bleaching operation.
4. The use of soaps and soap mixtures as oil removers has some tendency to flatten down the loose fibers and prevent their removal when singed. Probably the most harmless and all-around most satisfactory oil cleaner for ordinary cotton goods that are to be bleached is red oil, applied without rubbing.
5. Oxalic acid must always be washed out after use and is not considered safe unless this is done. The other cleaners when used in large quantities should also be washed out.
6. Oil removers whose composition is unknown should be used with particular caution.
7. Metal containers for oil removers should be examined carefully for rust, as this may cause iron stains when the remover is applied to the fabric.
8. On all goods that are to be dyed from the bale, no oil remover of any description should be used. Also on goods that are only desized preparatory to dyeing, and on goods that are given merely an open half bleach, we believe it is much better to eliminate the use of oil removers.
9. The use of oil removers on rayon fabrics is not to be encouraged. If used, they must be applied with the utmost care, as the fiber is easily chafed. They should definitely not be used on fabrics containing acetate.
10. When goods are damaged by the use of oil removers, the complaint should be settled on the basis of the ability of the finisher to remove the stains as they are actually received by him.
11. In all cases where oil removers are used, the responsibility for using them should rest on the gray mill, and it should be distinctly understood that the recommendation of certain oil removers as "safe" carries with it no guarantee that the mere use of the recommended product will automatically convert badly stained gray goods into first-quality fabrics on finishing.

The report states also: "It should be added that a number of proprietary stain and oil removers of unknown composition are on the market at the present time, and some are being regularly used and are giving good results.

"While we do not oppose the use of these products, particularly where they have already been found satisfactory, we cannot include in the 'safe' list any product whose composition may not be published."

Properties of Plastic Coating Materials When Applied to Textiles

By John B. Cleaveland

	Solubility	Compatibility	Water resistance	Acid resistance	Alkali resistance	Alcohol resistance	Gasoline resistance	Flammability resistance	Heat resistance	Cold resistance	Sunlight resistance	Tack resistance	Flexibility	Adhesion	Heat-sealing ability	Abrasion resistance	Color	Odor	Price range	% Yield — Film thickness same. Pyroxylin = 100
Pyroxylin	E	E	G	F	F	P	G	P	F	F	F	F	F	E	F	F	G	O	L	100
Cellulose acetate	F	F	F	F	F	P	G	G	E	F	E	G	F	F	G	F	E	O	M	122
Cellulose aceto-butyrate	G	G	G	F	F	P	G	G	E	F	E	G	P	G	F	F	G	O	M	136
Cellulose aceto-proprionate	G	G	G	F	F	P	G	G	E	F	E	G	G	G	G	F	G	O	M	133
Ethyl cellulose	E	E	E	F	E	P	F	G	E	E	E	G	G	G	G	F	G	O	M	145
Phenolics (general)	G	G	E	E	P	G	F	G	G	P	P	F	F	G	P	B	P	B	L	....
Alkyds (general)	G	G	F	F	F	F	G	G	G	F	G	F	G	G	P	F	G	O	L	....
Urea-aldehyde (general)	F	F	F	F	F	G	G	G	G	F	G	G	F	F	P	G	G	O	L	....
Melamine	F	F	F	F	F	G	G	G	G	F	G	G	F	F	P	G	G	O	L	....
Vinyl acetate	E	G	G	G	G	G	E	G	F	F	G	F	G	G	E	F	G	O	M	140
Vinyl chloride	P	P	E	E	E	E	E	G	G	E	G	E	E	P	P	E	G	O	M	118
Vinyl chloride-acetate	F	F	E	E	E	E	E	G	F	G	F	G	E	F	G	G	G	O	M	123
Vinyl butyral	F	F	G(1)	G(1)	G(1)	F(1)	G(1)	G	G(1)	G	G	G	G	G	G	G	G	O	H	151
Vinyl acetals	E	F	G(1)	G(1)	G(1)	F(1)	G(1)	G	G	G	G	G	G	G	G	G	G	O	M	147
Acrylates (general)	G	G	G	G	G	G(2)	G	G	G	G	E	F	G	E	G	F	E	S	H	150
Methacrylates (general)	G	G	G	G	G	G(2)	G(2)	G	E	G	E	F	G	E	G	F	E	S	M	158
Chlorinated rubber	G	F	E	E	E	E	G	E	P	P	P	G	F	G	G	G	G	O	M	101

(1) = after vulcanization; E = excellent; G = good; F = fair; P = poor; O = none; S = slight; B = bad; (2) = Some types soluble; L = low; M = Medium; H = High.

Preparation of Soda Bleach Liquors

Table 1 indicates the pounds of chlorine and 76% caustic soda, respectively, required per 1,000 gals. of bleach, for concentrations ranging between 10 and 172.5 gms. of available chlorine per liter. The table also shows the corresponding amount of excess caustic soda that will be obtained, which is also the minimum amount that should be used commercially where a product of good stability is required. The corresponding "Trade Percent," the approximate percent by weight, and the approximate specific gravity of freshly prepared solutions are also shown in the table.

Table 1

Soda Bleach Liquor From Chlorine and Caustic Soda

Available chlorine			Pounds per 1,000 gals. bleach liquor		Excess caustic soda (NaOH)		Approximate specific gravity of finished bleach liquor (at 20° C.)
Nominal % (trade designation)	Grams per liter	Approximate % (by weight)	Chlorine	Commercial caustic soda (98% NaOH)	Grams per liter	Approximate % (by weight)	
1.0	10.0	....	83.4	118.9	2.7	0.27	1.02
....	10.2	1.0	85.1	121.7	2.8	0.28	1.02
2.0	20.0	....	166.8	220.8	3.4	0.33	1.03
....	20.7	2.0	172.6	227.4	3.4	0.33	1.03
3.0	30.0	....	250.2	321.8	4.0	0.38	1.05
....	31.4	3.0	261.9	336.1	4.1	0.39	1.05
4.0	40.0	....	333.6	423.6	4.7	0.44	1.06
....	42.6	4.0	355.3	449.5	4.8	0.45	1.07
5.0	50.0	....	417.0	524.7	5.3	0.49	1.08
....	54.0	5.0	450.4	565.6	5.6	0.52	1.08
6.0	60.0	....	500.4	626.5	6.0	0.55	1.09
....	65.8	6.0	548.8	684.7	6.3	0.58	1.10
7.0	70.0	....	583.8	727.5	6.6	0.60	1.10
....	78.0	7.0	650.5	808.5	7.1	0.64	1.11
8.0	80.0	....	667.2	828.6	7.2	0.64	1.12
9.0	90.0	....	750.6	930.4	7.9	0.70	1.13
....	90.3	8.0	753.1	933.3	7.9	0.70	1.13
10.0	100.0	....	834.0	1031.4	8.5	0.74	1.14
....	103.2	9.0	860.7	1063.9	8.7	0.76	1.15
11.0	110.0	....	917.4	1133.3	9.2	0.80	1.16
....	116.2	10.0	969.1	1196.2	9.6	0.83	1.16
12.0	120.0	....	1000.8	1234.3	9.8	0.84	1.17
....	129.8	11.0	1082.5	1333.4	10.4	0.88	1.18
13.0	130.0	....	1084.2	1336.2	10.5	0.89	1.18
14.0	140.0	....	1167.6	1437.2	11.1	0.93	1.19
....	143.5	12.0	1196.8	1473.3	11.4	0.95	1.20
15.0	150.0	....	1251.0	1539.1	11.8	0.98	1.21
....	157.9	13.0	1316.9	1619.1	12.3	1.01	1.21
16.0	160.0	....	1334.4	1640.1	12.4	1.02	1.22
17.0	170.0	....	1417.8	1742.0	13.1	1.07	1.23
....	172.5	14.0	1438.7	1766.8	13.2	1.07	1.23

NOTE:—For less than about 50 gms. per liter available chlorine, it is better to prepare about 50 gms. per liter bleach and then dilute finished bleach to strength desired.

Courtesy Solvay Sales Corp.

Table 2 shows the pounds of chlorine, caustic soda, and soda ash required to produce 1,000 gals. of bleach liquor at various concentrations up to 85 gms. of available chlorine per liter. In this table it is assumed that just enough caustic soda is used to complete the reaction with the chlorine, leaving no excess of caustic soda, but adding soda ash in excess sufficient to insure reasonable stability. The excess soda ash expressed in grams of actual sodium carbonate (Na_2CO_3) per liter is shown in the table.

Table 2

Soda Bleach Liquor from Chlorine and Caustic Soda Plus Soda Ash

Available chlorine grams per liter	Pounds per 1,000 gals. bleach			Excess Na_2CO_3 grams per liter
	Chlorine	Commercial 76% caustic soda	Commercial 58% soda ash	
10	83.4	95.9	42.1	5
15	125.1	144.0	63.2	7.5
20	166.8	192.0	84.2	10
25	208.5	240.0	101.1	12
30	250.2	288.0	117.9	14
35	291.9	336.0	134.7	16
40	333.6	384.0	143.1	17
45	375.3	432.0	151.6	18
50	417.0	480.0	160.0	19
55	458.7	528.0	168.4	20
60	500.4	576.0	176.8	21
65	542.1	624.0	185.2	22
70	583.8	672.0	193.7	23
75	625.5	720.0	202.1	24
80	667.2	767.9	210.5	25
85	708.9	815.9	218.9	26

Courtesy Solvay Sales Corp.

In Table 3 are given the pounds of chlorine and soda ash required per 1,000 gals. of bleach, up to 40 gms. of available chlorine per liter. These are the quantities commonly used in preparing this type of bleach and will yield a bleach that is very active. In some special cases a still more active bleach is desired, in which event the amount of soda ash may be decreased. However, it is not advisable to prepare a bleach that is much more active unless technical supervision is available.

Table 3

Soda Bleach Liquor from Chlorine and Soda Ash

Available chlorine grams per liter	Pounds per 1,000 gals. bleach	
	Chlorine	Commercial 58% soda ash
10	83.4	278
15	125.1	417
20	166.8	556
25	208.5	695
30	250.2	834
35	291.9	973
40	333.6	1,112

Courtesy Solvay Sales Corp.

Fireproofing Textiles

The following table by William F. Brosnan, from an article in TEXTILE WORLD, indicates approximately the minimum percentage by weight of various compounds for the flameproofing of cotton:

	%		%		%		%
Ammonium sulfate	4 to 5	Calcium chloride	7	Epsom salts	15	Calcium phosphate	30
Ammonium chloride	5 to 6	Zinc sulfate	7	Zinc borate	20	Magnesium phosphate	30
Magnesium chloride	6	Borax	9	Zinc phosphate	20	Silicic acid	30
Ammonium phosphate	6	Boric acid	11	Aluminum borate	25	Sodium chloride	35
Aluminum hydrate	6	Ammonium tungstate	15	Sodium phosphate	30	Sodium silicate	50

Mothproofing Compounds

With minor differences, most authorities agree on the properties necessary in a mothproofing compound. It is believed the following list gives all major requisites:

1. It must repel clothes moths or render fibers proof against moth grubs.
2. It must be permanent in its effect.
3. It must not injure the fiber's physical properties.
4. It must not affect the color of white fibers or the shade or degree of fastness of any dyestuffs already in the fiber.
5. It must be odorless.
6. It must not dust off.
7. It must be nonpoisonous to human beings and must not have any irritating action on the skin.
8. It must be capable of simple and uniform application.
9. It must be available at a reasonable cost.

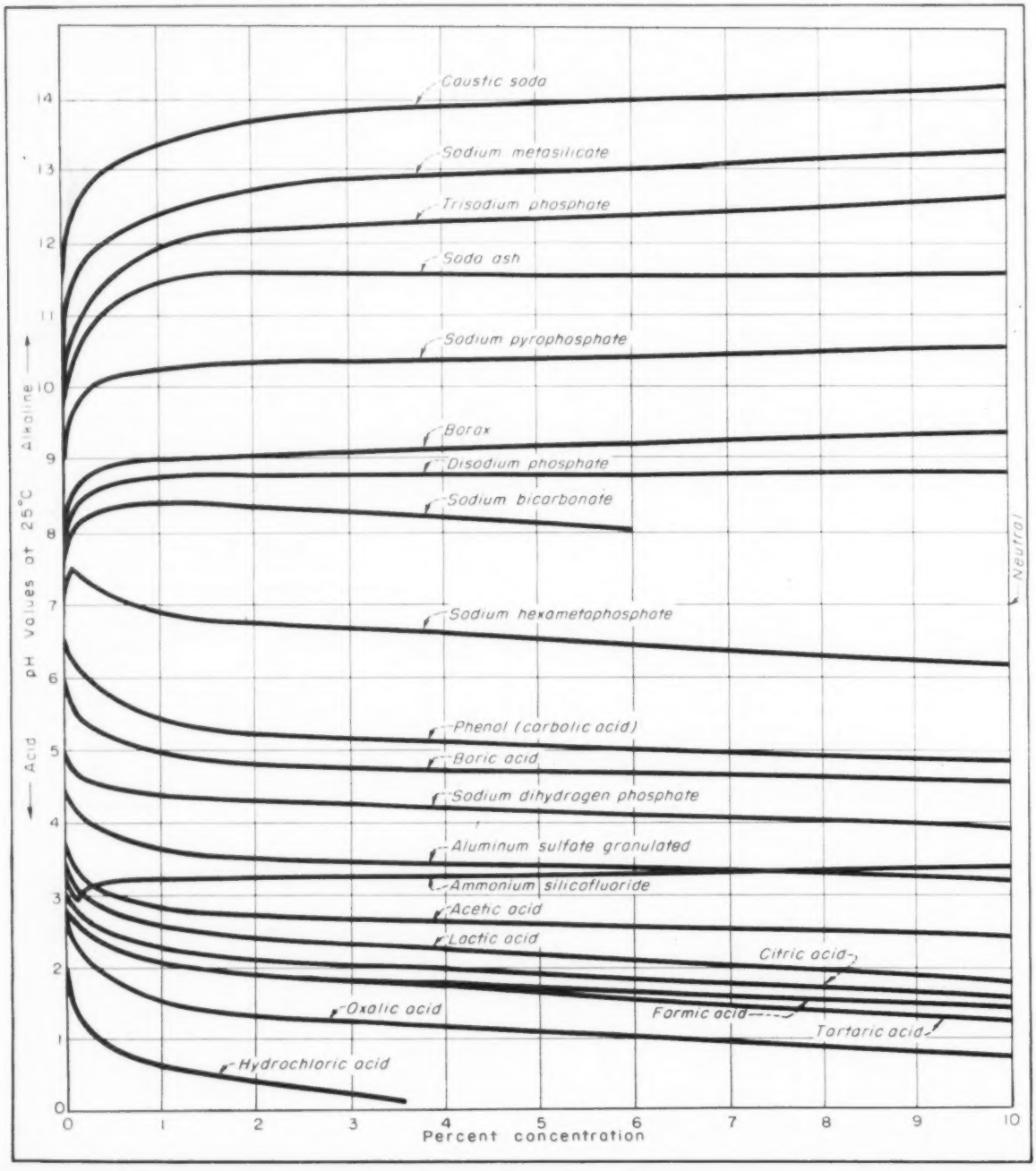
pH Curves of Common Acids, Bases, and Salts

This chart represents the combination of various pH determinations that have appeared in technical publications over a period of years.

It has proved quite useful in predicting the pH of chemical mixtures and the buffer action of the individual compounds.

The pH values were determined colorimetrically for all materials except caustic soda. Concentrations are given in percent except for sodium bicarbonate and disodium phosphate, which are in grams per 100 cc. of distilled-water solution.

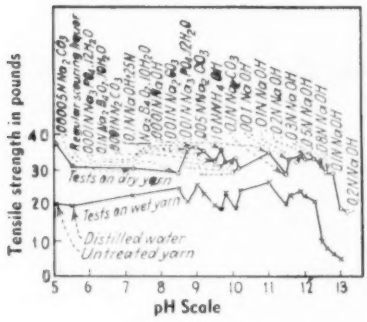
Much of the data represents work done at the Stamford laboratories of the American Cyanamid Co. and published in TEXTILE WORLD.



Effect of Alkalis and Chemicals on Wool Strength

The data in two charts and table at top are the result of experiments described by Frederick R. Harrison in TEXTILE WORLD.

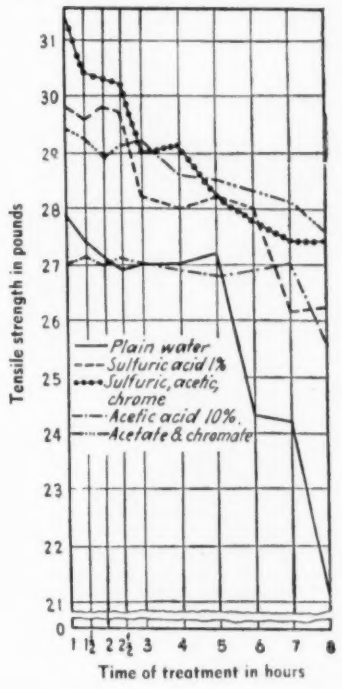
Relation between pH and tensile strength of worsted yarn



Effect of treatment at 120° F with various alkalis on tensile strength of worsted yarn

Chemical	pH value	Grams per liter chem. pure	Lbs. per 1000 gals. commercial	Lbs. tensile strength dry	Lbs. tensile strength wet
Trisodium phosphate					
.0001 N	8.75	0.0380	0.32	36.0	23.5
.0010 N	10.09	0.3802	3.20	33.5	19.5
Sodium carbonate					
0.0001 N	9.20	0.0053	0.05	35.5	23.5
0.0010 N	9.78	0.0530	0.45	31.5	24.0
0.0050 N	10.15	0.2650	2.25	29.5	24.5
0.1000 N	11.50	5.3000	45.00	28.5	20.5
Ammonia		28%	18°		
1.0000 N	11.00	125.1700	520.00	35.0	26.5
Caustic soda			76%		
0.0001 N	9.70	0.0040	0.03	35.5	19.0
0.0010 N	11.62	0.0400	0.33	33.0	21.0
0.0100 N	11.89	0.4001	3.333	34.0	24.5
0.0200 N	12.00	0.8002	6.66	28.8	20.5
0.0300 N	12.28	1.2003	10.00	33.5	21.5
0.0500 N	12.54	2.0005	16.66	30.5	10.5
0.1000 N	12.77	4.0010	33.33	28.5	8.0
0.2000 N	13.01	8.0020	66.66	19.0	5.5
Borax					
0.1000 N	8.98	19.0720	158.87	36.5	26.0
Distilled water	5.55	.....	.....	31.0	20.0
Average strength of untreated skeins				37.5	20.5

Effect of treatment with various chemicals on strength of wool

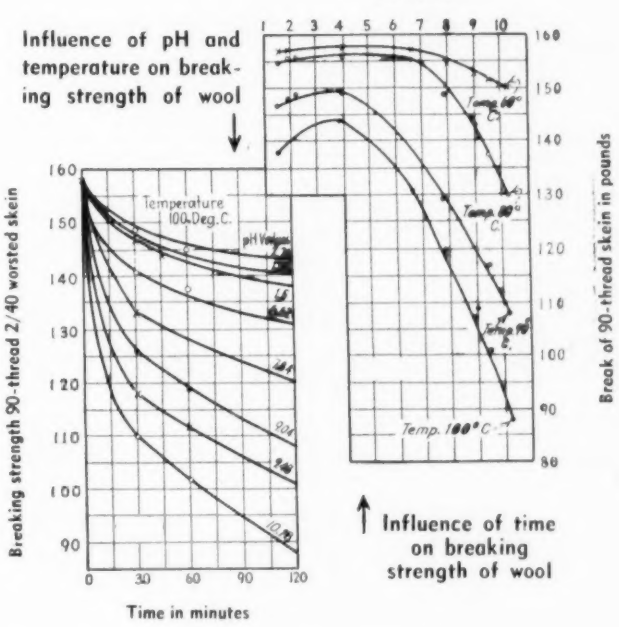


Influence of pH on the tensile strength of wool

Chemicals Used	pH	Tensile Strength in Lbs. – Original	After 30 mins.	After 60 mins.	After 120 mins.
0.25% Hydrochloric acid, trace potasium phthalate	1.50	158	147	144	138
0.3% Oxalic acid	1.88	158	148	146	140
0.5% Tartaric acid	2.21	158	149	145	143
0.5% Acetic acid	3.84	158	149	146	144
Distilled water	6.62	158	141	138	131
1% Triethanolamine oleate	7.84	158	133	129	120
1% Olive oil soap adjusted to pH 9.0 by hydrochloric acid	9.04	158	126	119	108
1% Olive oil soap adjusted to pH 9.5 by hydrochloric acid	9.48	158	118	112	101
1% Olive oil soap	10.18	158	110	102	88
1% Olive oil soap plus 1/4% soda ash	10.88	158	71	61	37
1% Olive oil soap plus 1/16% sodium hydroxide	11.82	158	Disintegrated		

Material employed 2/40 worsted yarn; temperature, 100° C.; ratio of wool to solution, 1 to 50.

Influence of pH and temperature on breaking strength of wool


pH Values
Breaking strength 90-thread 2/40 worsted skein
Break of 90-thread skein in pounds
Time in minutes
Temperature 100 Deg. C.
Temp. 100° C.
Influence of time on breaking strength of wool

Influence of temperature on tensile strength of wool

Temperature, Deg. C.	Time, Mins.	Tensile Strength in Lbs. pH 9	pH 9.5	pH 10.2
60	30	152	150	148
60	60	151	147	147
60	120	150	146	145
80	30	141	138	135
80	60	139	136	132
80	120	135	131	125
90	30	130	127	120
90	60	128	125	116
90	120	120	117	108
100	30	125	117	107
100	60	120	112	101
100	120	111	104	92

Material employed, 2/40 worsted yarn; original strength, 158 lbs; chemical to produce indicated, pH, same as given in table above; ratio of wool to solutions 1 to 50.

These tables and charts appeared in an article by H. H. Mosher in TEXTILE WORLD.

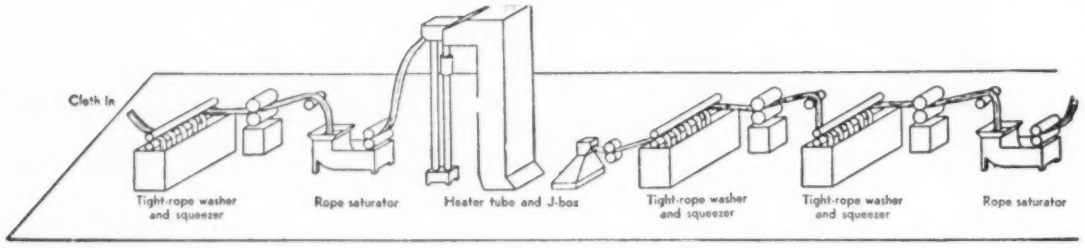
Continuous Finishing Ranges — Types and Component Parts

By C. NORRIS RABOLD, Consulting Editor, TEXTILE WORLD.

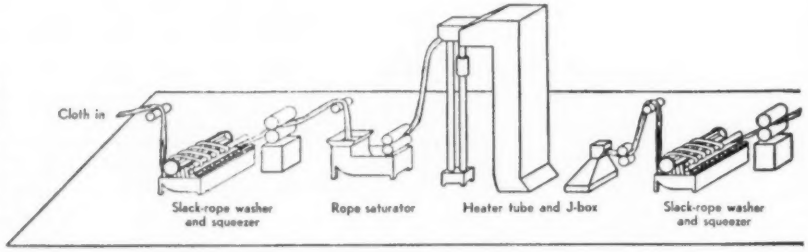
Continuous finishing ranges are of two types: continuous scouring and bleaching ranges that prepare cloth for dyeing, printing, or whites in a few hours or less; and continuous dyeing ranges capable of applying the fastest types of dyes to all constructions and weights of fabrics in practically any depth of shade in a matter of minutes rather than hours. Contrasted with batch operations, continuous ranges save time and labor and give greater uniformity of product.

CLOTH-PREPARATION RANGES

Du Pont Systems—

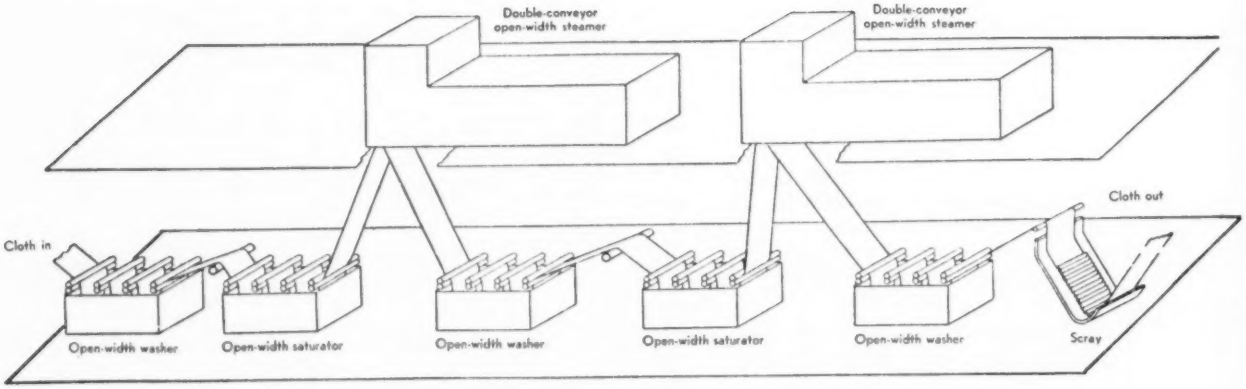


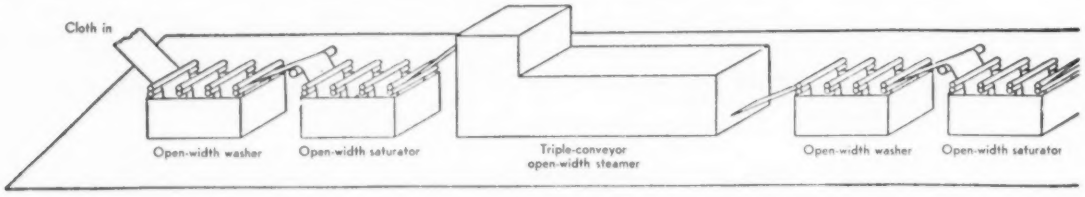
CONTINUOUS ROPE preparation and bleaching range containing slack washers. This unit is designed for the bleaching of lightweight or loosely woven goods that will not stand the tension of a tight-strand washer. Since the danger of bruises is also decreased, some constructions run on this range may be dyed satisfactorily.



CLOTH-PREPARATION RANGES

Mathieson Systems—





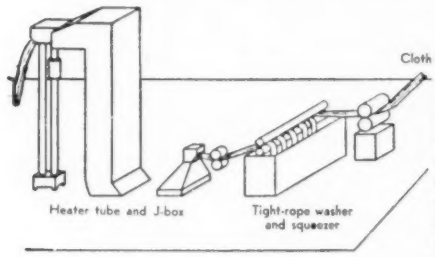
Modern instrumentation and engineering make possible the recording, measuring, and proportioning of chemical feeds, steam, water, temperatures, levels, and time intervals, as well as cloth speed and tension—all-important factors in the efficient operation of ranges. It is often possible to utilize existing squeeze rolls, reels, washers, pads, soapers, dryers, and other equipment and thus reduce installation cost.

Ranges for both preparation and dyeing are exceedingly flexible, so that a variety of processes can be carried out on them, depending on the problem in hand.

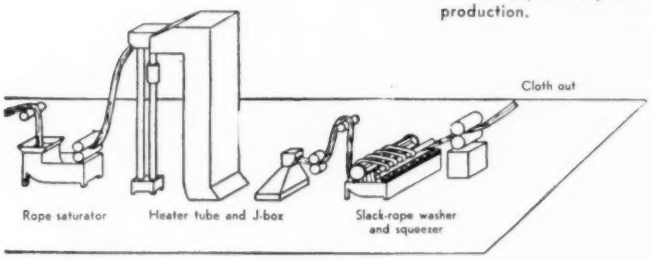
Operational speeds of preparation ranges vary from a maximum of about 150 yds. per min. for the open width types to 150 to 175 yds. per min. for the rope systems with slack washers, and up to 300 yds. per min. for the rope systems with tight-strand washers.

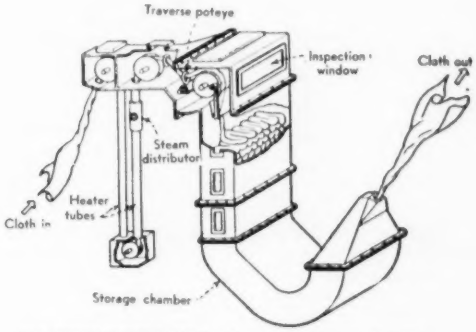
On these and the following pages are presented typical ranges. The identity and order of the necessary machine units are shown in each group.

E. I. du Pont de Nemours & Co., Wilmington 98, Del.



DU PONT CONTINUOUS ROPE preparation and bleaching range originally designed for producing whites on light- and medium-weight goods. This range is capable of high production speeds, and weights of cloths may be changed without any interruption in production.



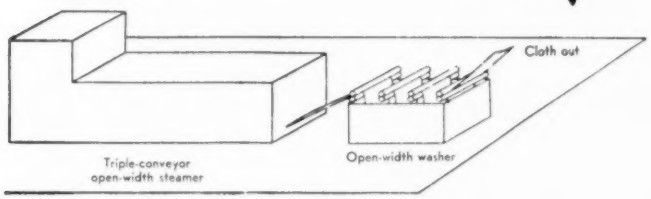


DU PONT ROPE-TYPE heater and J-box. In the Du Pont system, the cloth is pre-heated before it enters the J-box. The goods pass through a pair of heater tubes containing steam and are brought to an elevated temperature. Since the heater tubes and storage J-box are one unit, little or no loss of heat takes place in storage. The same principle is employed in the open-width range, except the tube is designed to permit the cloth to pass through in open width.

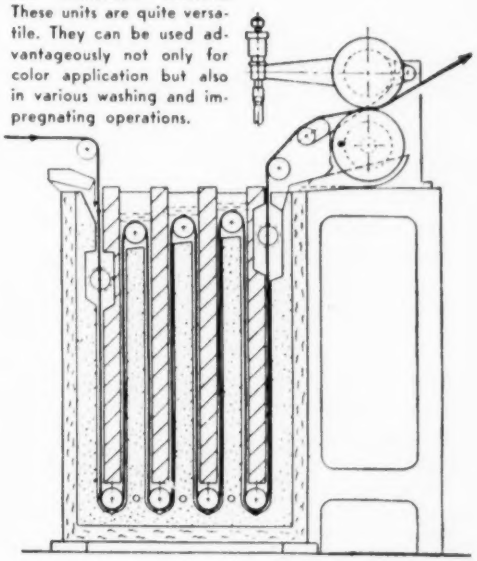
Mathieson Alkali Works, Inc., 60 E. 42nd St., New York

A DOUBLE-STAGE, all open-width range, using two endless stainless-steel conveyors in each steaming unit to carry the cloth. Fabrics of all types may be prepared on this range, both for whites and dyeing. It is most useful in the preparation of such types of cloth as may be bruised easily. As shown, the steaming units are located over the saturators and washers to conserve floor space.

A DOUBLE-STAGE, all open-width range, with triple conveyors in the steaming sections. By the use of three conveyors, the length of the steamers is shortened considerably so that a straight-line layout is possible. Both the double and triple conveyors permit the changing of the cloth's position while in the steamer. This positional change makes for uniformity in moisture, chemical, and heat distribution throughout the cloth pile. Operating speeds of both ranges are about 125 yds. per min. maximum.



A CROSS-SECTION of a single Williams unit showing cloth travel, liquid and steam circulation, feeds, and squeeze arrangement at delivery end. The unit contains slightly over 60 gals. of liquor that can be heated to 200° F. or over, as desired, by steam passing around the immersion sections. These units are quite versatile. They can be used advantageously not only for color application but also in various washing and impregnating operations.

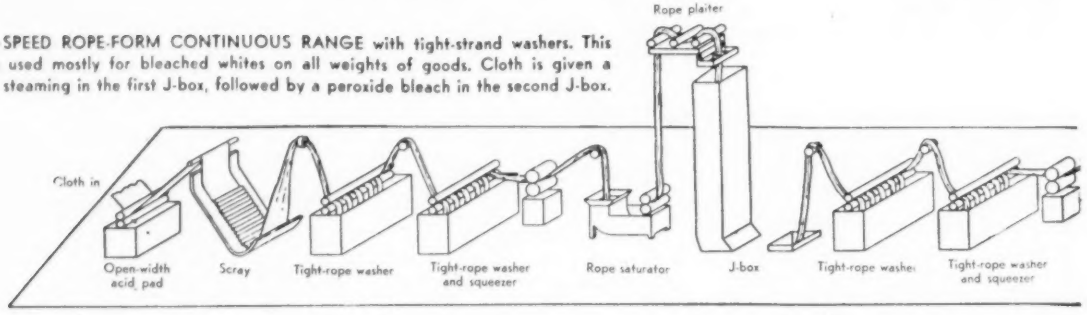


Continuous Finishing Ranges *(Continued)*

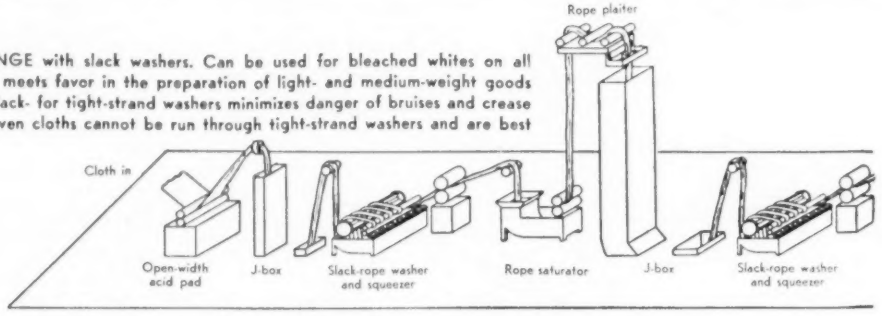
CLOTH-PREPARATION RANGES

Becco Systems—

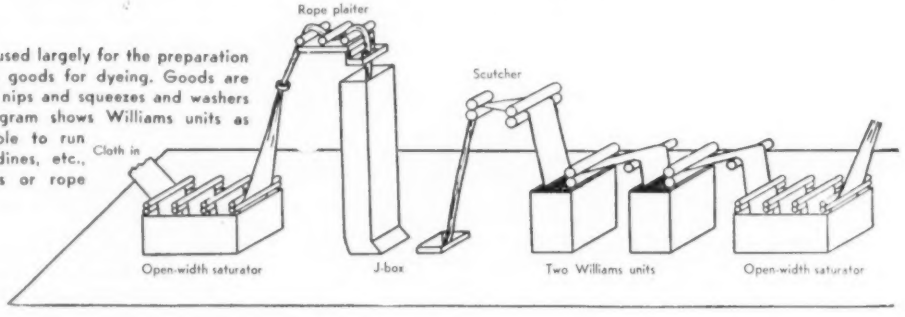
HIGH-SPEED ROPE-FORM CONTINUOUS RANGE with tight-strand washers. This type is used mostly for bleached whites on all weights of goods. Cloth is given a caustic steaming in the first J-box, followed by a peroxide bleach in the second J-box.



ROPE-FORM CONTINUOUS RANGE with slack washers. Can be used for bleached whites on all weights of goods. This type range meets favor in the preparation of light- and medium-weight goods for dyeing, as the substitution of slack- for tight-strand washers minimizes danger of bruises and crease marks. Certain sheer or loosely woven cloths cannot be run through tight-strand washers and are best processed on this type.

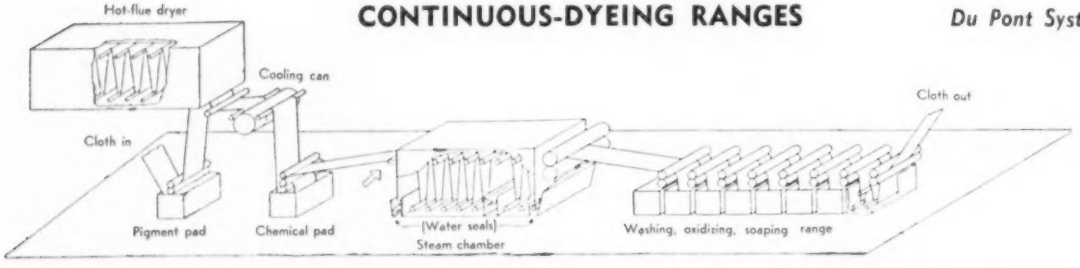


SEMI-OPEN-WIDTH RANGE used largely for the preparation of medium- and heavy-weight goods for dyeing. Goods are in the open width through all nips and squeezes and washers are of open-width type. Diagram shows Williams units as washers. This makes it possible to run such fabrics as twills, gabardines, etc., with little danger of bruises or rope marks.



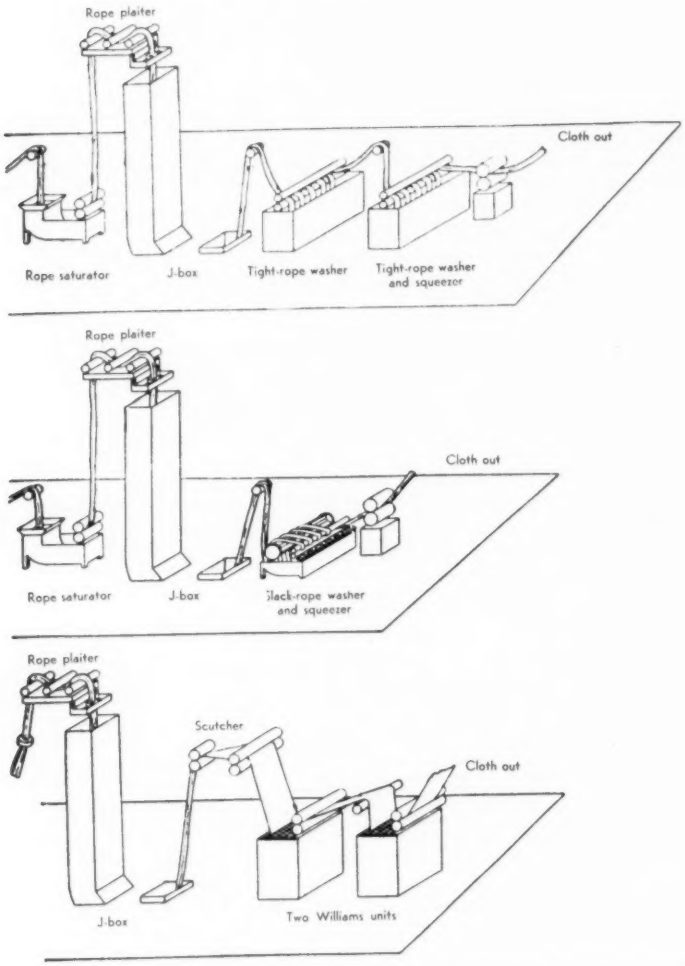
CONTINUOUS-DYEING RANGES

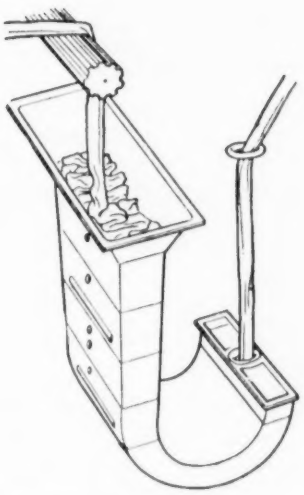
Du Pont Systems—



A COMPLETE SYSTEM for the application of vat colors continuously in all depths of shade. The dispersed vat dyes are applied to the cloth in the pigment pad and dried through a hot-air dryer. The dried, pigmented goods then enter a chemical pad containing caustic soda and sodium hydrosulfite, and pass wet into the steam chamber where they are steamed for a few seconds at or about 212° F. Rapid reduction and dyeing of color into the fiber takes place in this short steaming period. When the goods leave the steamer, the usual operations necessary for color fixation and fastness take place; namely, washing, oxidizing, washing, and soaping. Cloth enters through throat at top of steam chamber indicated by arrow and leaves through water seal at the delivery end.

Buffalo Electro-Chemical Co., Buffalo 7, N. Y.



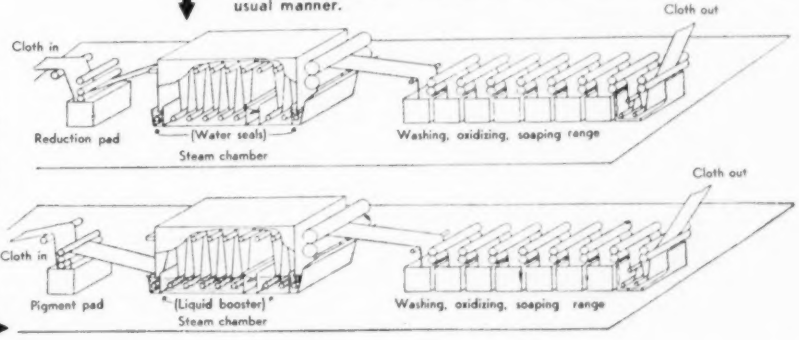


BECCO STEAM J-BOX. In the Becco system, the J-box itself is open at the top and steam is introduced directly into the box at one or more points, depending upon its size. There is little or no loss of heat or steam from the open top, as the entering cloth acts as a seal.

E. I. du Pont de Nemours Co., Wilmington 98, Del.

REDUCED PAD steam range. This range setup employs but a single pad which may be a two-bowl, one-dip type. Both vat and sulfur colors can be applied by this method in almost all depths of shade. Dyes are reduced in feed tanks and fed into the pad box in the usual manner.

SINGLE PAD STEAM RANGE threaded for pigment padding, steam, and liquid booster. In this case, the steam chamber will contain caustic soda and sodium hydrosulfite to effect reduction of the vat dye. By raising the top roll of the three-bowl pad and threading the cloth for one dip and one nip, reduced color may be applied and fixed in the steam-chamber by either a soda-ash or caustic-soda booster, combined with the steam atmosphere.



Continuous Finishing Ranges *(Continued)*

CONTINUOUS-DYEING RANGES—Du Pont Systems *(Continued)*

PIGMENT PAD, wet, chemical pad, steam. On some shades and fabrics, it has been proved that it is unnecessary to dry between the pigment and chemical pad. Goods may be run wet into the chemical pad, a differential set between the two permitting the proper pickup of chemicals before entering the steam chamber.

THIS RANGE is similar to the preceding, except for the dryer. Vat pigment color is applied in a three-bowl pad, dried into the goods, and reduced by a combined liquid-steam booster in the steam chamber.

CONTINUOUS-DYEING RANGES

Williams System—S. H. Williams, General Dyestuff Corporation, 435 Hudson St., New York, N. Y.

A COMPLETE, ALL-PURPOSE RANGE, consisting entirely of Williams units for the dyeing, rinsing, oxidizing, and soaping operations. Vats, naphthols, sulfurs, directs, stabilized leuco esters, and para colors may be applied to both light- and heavyweight cloths on this range.

RANGE DESIGNED to make use of existing plant equipment, such as a continuous open soaper. By placing a color pad, hot-flue dryer, and two Williams units before the soaper, dyeing operations may be efficiently carried out with all classes of dyes mentioned under the preceding range.

A SHORT CONTINUOUS RANGE used for the dyeing of rayons, multifibered fabrics, toweling, etc. with vats and other classes of colors. Vat dyes may be applied, either pad-reduced or pad-pigment, with additional reduction and leveling taking place in the single Williams unit. This type of range lends itself to the processing of rayons and similar fabrics, since they are often soaped off in the rope form.

Selection of Mildewproofing Agent

By KARL M. HERSTEIN in TEXTILE WORLD

1. In order to obtain easy incorporation with the size, the antiseptic must be fairly soluble in water at the temperature of mixing.

2. After being added to the size or finish, the antiseptic must remain unchanged. If it is volatile with steam, it will boil out; and if it is decomposed by heat, its antiseptic properties may be lost.

3. The color of the size or finish must not be altered by adding the antiseptic, unless the result happens to be favorable or can be counteracted easily by suitable tinting.

4. The possession of an odor may be very objectionable if it is imparted to the cloth.

5. Tendering of the yarn or fabric must not be produced, either by direct action as of strong acids or oxidizing agents or by decomposition on heating, which is generally recognized as the objection to the use of zinc chloride.

6. The dyeing and finishing properties of the yarn or fabric must not be affected.

7. The antiseptic must have no action upon those parts of the machinery with which it is likely to come in contact.

8. Safety in handling the antiseptic is essential.

9. There must be no action on the constituents of the size or finish that will affect the characteristic feel of the resulting fabric.

10. To be of practical value the antiseptic must be obtainable with ease in sufficient quantities and cheaply enough for regular use. Cheapness depends, however, not only on the price per pound but also on the amount that must be used.

Oxidizing Agents

Formulas for volume of 40 to 80 gals.

Sodium bichromate . . 2 to 6 lbs.
Acetic acid 56% . . ½ to 2 gals.
Temperature F . . . 120 to 212°

Sodium perborate . . . 2 to 6 lbs.
Acetic acid 56% . . ½ to 2 gals.
Temperature F . . . . 80 to 140°

Hydrogen peroxide (100 vol.) . . . . . 2 to 4 lbs.
Acetic acid 56% . . ½ to 2 gals.
Temperature F . . . . 80 to 140°

Sodium chlorite . . . . ¾ to 2 lbs.
Bicarbonate of soda . . . . . 5 to 15 lbs.
Temperature F . . . . 80 to 140°

Ammonium persulfate . . . . . 2 to 5 lbs.
Acetic acid 56% . . ½ to 2 gals.
Temperature F . . . . . 80°

Properties of agents

Rate of oxidation: Sodium bichromate most rapid. Others generally slower, though this depends a great deal on temperature and concentration. Ammonium persulfate is particularly slow, since it should be run at a low temperature.

Development of oxycellulose: Sodium bichromate is not likely to form oxycellulose. Formation is possible with all the others if temperature, concentration, and acidity or alkalinity of bath are not reasonably well controlled. A lowering of tensile strength of the fabric may result.

Shade change: Shade not affected over rather large variations in concentration or temperatures with sodium bichromate. Loss of depth or dulling of shade can occur if these factors are not controlled with the other materials.

Fastness: There appears to be little difference in fastness to light, washing, chlorine, etc. of any of the oxidizing agents mentioned when they are properly applied.

Ease of removal: Sodium bichromate is difficult to wash out and leaves goods harsh and nonabsorbent. The other four oxidizing agents wash out readily and leave goods soft and absorbent. The ease of rinsing of sodium perborate, hydrogen peroxide, sodium chlorite, and ammonium persulfate is of considerable value to dyers who use the pad-jig method, as the number of ends of wash can be decreased and production increased.

Hydrogen Peroxide (100 Vol.) Conversion Chart

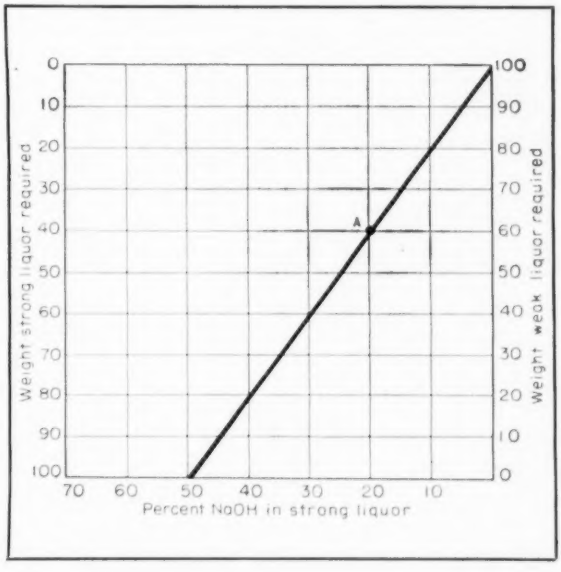
Vol. conc.	Lbs. per 100 gals.	cc. per liter	% H_2O_2	% available oxygen (O_2)	Qts. per 100 gals.
0.25	2.3	2.3	0.076	0.035	1
0.50	4.6	5.0	0.152	0.070	2
0.75	6.9	7.5	0.228	0.105	3
1.00	9.2	10.0	0.304	0.140	4
1.50	13.8	15.0	0.456	0.210	6
2.00	18.4	20.0	0.608	0.280	8
2.50	23.0	25.0	0.760	0.350	10
3.00	27.6	30.0	0.912	0.420	12
3.50	32.2	35.0	1.063	0.490	14
4.00	36.8	40.0	1.215	0.560	16

To substitute 130 vol. H_2O_2 for 100 vol., use 79% by weight or 77% by volume for equivalent results.

Mixing Chart for Caustic Solutions

By means of the accompanying graph many detailed and complicated calculations can be omitted; and by very simple means dilutions can be obtained for forming any desired caustic concentration. Caustic can be diluted with water to obtain any concentration. Strong caustic can be mixed with a weaker caustic to obtain a solution of any concentration intermediate between the two.

Example: If you want to form 20% caustic from 50% caustic, the chart is used as follows: (1) A line is drawn from 50, representing the percent caustic in the strong liquor, to zero, representing the percent caustic in water. This line crosses 20, the desired percent caustic in the finished liquor, at Point A. (2) This point corresponds to 40 weight units of 50% caustic and 60 weight units of water. Mixing the materials in this proportion will result in the formation of 20% caustic: 60 ÷ 40 = 1.5 lbs. of water must be added to each 1 lb. of 50% caustic to produce 20% caustic. (3) Dividing the weight units by the specific gravity gives the volume of materials used: 40 ÷ 1.529 = 26.16 gals. of 50% caustic; 60 ÷ 1 = 60 gals. of water. Mixing these quantities of material will yield a 20% solution. 60 ÷ 26.16 = 2.29 gals. of water must be added to each 1 gal. of 50% caustic to produce 20% caustic. (Chart reproduced through courtesy of Mathieson Chemical Corp.)



Lubrication Chart Showing Correct Ranges and Types of Oils and Greases

Parts of textile equipment requiring lubrication	Oil Range in Viscosity Seconds Saybolt At 100° F.																	At 210° F.		Grease NLGI No.						NOTES
	50–60	60–70	70–100	100–130	130–150	150–170	170–180	180–200	200–220	220–250	250–300	300–350	350–400	400–450	450–500	500–750	750–1200	110–145	Semifluid	No. 00	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	
Bearings Ball or roller, general purpose				•	•	•	•	•	•	•											•	•					Highly refined straight mineral pale filtered oil. Special ball- or roller-bearing grease. Soda-lime base.
Bearings, plain or reservoir, general purpose									•	•	•										•	•					Straight mineral machine oil. Lime-soap cup grease.
Bearings, plain or reservoir Oil impregnated, general purpose						•	•	•	•	•	•	•	•	•													Highly refined straight mineral oil resistant to oxidation.
Bearings, beamers and warpers – Plain									•	•	•										•	•					Straight mineral machine oil. Medium-soft cup grease.
Bearings, beamers and warpers Ball bearings																					•	•					Soda-lime-base ball-bearing grease.
Bearings, calender, antifriction												•	•	•	•	•					•	•					Pale-colored, straight mineral oil. Soda-lime-base grease.
Bearings, dry cans																		•									Bright Stock straight mineral oil or highly refined petrolatum.
Bearings, fans on dryers																						•	•				Soda-soap spongy-texture grease.
Bearings, plain, fulling mills, etc.											•	•	•								•	•					Straight mineral machine oil, or lime-soap water-insoluble grease.
Bearings, printing machine cylinder																		•									Bright Stock straight mineral oil.
Bearings, slasher cylinder																		•			•	•					Bright Stock straight mineral oil. Soda-soap-base grease of spongy texture.
Calender, hydraulic system				•	•	•	•	•																			Pale, filtered, highly refined, low-pour-test straight mineral oil.
Calender roll necks																								•	•	•	High-temperature brick or packaged soda-soap grease.
Comb boxes, new (tight)									•	•	•																Highly refined straight mineral pale filtered oil.
Comb boxes, old (worn)																			•								Light grease lime-soap base.
Condenser tapes and rub aprons												•	•	•	•												Highly refined compounded pale oil.
Dabbing motion																			•								Liquid grease, lime-soap base.
Gears and chains Enclosed, high-speed									•	•	•																Straight mineral machine oil.
Gears and chains Enclosed, medium speed																		•									Bright Stock straight mineral oil.
Gears and chains, exposed																					•	•					Soft adhesive-type grease.
Gill boxes, roll necks																						•	•	•	•	•	Nos. 2&3 are medium-bodied, lime-soap water-repellent grease. Nos. 5&6 are soda-soap brick-type grease.
Knitting, circular Dial and cylinder needles				•	•	•	•	•																			Light-colored compounded or straight mineral oil.
Knitting, circular Machine parts									•	•	•																Pale-colored, straight mineral.
Knitting, full-fashioned Needles, narrowing points, etc.			•	•	•																						Very light-colored compounded oil or straight mineral oil having ability to be removed from goods easily upon scouring.
Knitting, full-fashioned Oscillating motions								•	•	•	•																Pale-colored, compounded or straight mineral oil, resistant to oxidation.
Knitting, full-fashioned Coulier motion																			•								Liquid grease, lime-soap base.
Looms, crankshaft												•	•	•	•	•			•								Liquid grease, lime-soap base, nondripping character, or straight mineral oil.
Looms, harness and picking cams																					•	•					Soft, adhesive-type grease of buttery texture.
Looms, dobby and Knowles heads												•	•	•	•	•			•								Liquid grease, lime-soap base, or straight mineral oil.
Looms, jacquard head, pump rods, etc.												•	•	•	•	•			•								Liquid grease, lime-soap base, or straight mineral oil.
Looms, jacquard head Needle hooks	•	•	•																								Highly refined, light-bodied compounded mineral oil, rust inhibited and nongumming.
Mandrels, printing machines																								•	•		High-temperature brick or packaged soda-soap grease.
Saddles, top rolls, stands																	•		•								Straight mineral oil, pale-color, low-pour-test, or liquid grease, lime-soap base.
Spindles, according to speed, type, design		•	•	•	•		•	•	•																		Solvent-refined, dewaxed pale mineral oil; low-pour test, highly resistant to oxidation. Viscosity to meet manufacturers spec.
Squeeze rolls, backwashers																										•	Heavy lime-soap grease.
Tenter frames Clip chains and pins																		•									Bright Stock straight mineral oil.
Tenter frames Race ways and expansion gears																							•	•			Bright Stock straight mineral oil.
Twister rings or ring twisters				•	•	•	•	•	•	•	•	•	•	•							•	•	•	•			High-temperature soda-soap grease, spongy texture. Highly refined straight mineral oil, rust inhibited. Light-colored grease, soda-soap base, containing medium-bodied mineral oil.
Winders Spindle gear boxes and gainers					•	•	•	•																			Highly refined straight mineral oil, pale colored.
Winders Averse cams																					•	•					Soft, adhesive-type grease of buttery texture.
Winders Worm drives																		•									Bright Stock straight mineral oil.

ASTM worked penetrations	NLGI Number
355–385	0
310–340	1
265–295	2
220–250	3
175–205	4
130–160	5
85–115	6

Chart To Aid Selection of Proper Types of Paint

Chart shows various types of paint suitable for mill walls, ceilings, floors, equipment, and other interior and exterior surfaces.

		Types of Paint																							
		Mill white undercoat	Mill white finish	Mill white, fume resisting	Metal primer	Galv. iron primer	Floor enamel, or varnish	Penetrating floor finish	Decorative enamel	Machinery enamel	Enamel undercoat filler	Primer or sealer	Metal protective paint	Stucco paint	Oil paint primer	Exterior oil paint	Porch and deck paint	Fire red enamel	Asphalt tank coating	Asphalt stack paint	Aluminum paint	Aluminum, heat resisting	Truck enamel
Interior Surfaces	Walls and ceilings, wood	•	•									•									•		
	Walls and ceilings, brick, concrete	•	•									•									•		
	Laboratory walls and ceilings	•		•																			
	Metal partitions, lockers, etc.				•				•	•			•				•				•		
	Structural steel beams, columns	•	•		•																•		
	Steel sash	•	•		•								•								•		
	Wood floors						•	•															
	Concrete floors						•	•				•											
	Piping, water, air, conduit				•								•					•			•		
	Piping, steam, hot water				•								•									•	
	Radiators				•				•	•			•				•					•	
	Machinery and equipment				•					•	•						•				•	•	
Exterior Surfaces	Structural steel				•								•								•		
	Ornamental iron, fire escapes				•								•										
	Concrete and brick walls											•		•									
	Wood structures														•	•							
	Porch floors														•		•						
	Wood sash														•	•							
	Steel sash				•								•										
	Hydrants and fire equipment				•													•					
	Metal tanks				•								•						•		•		
	Metal stacks				•															•		•	
	Concrete stacks											•		•									
	Galvanized steel work					•							•										
	Trucks				•					•													•

Textile-Mill Applications of Colors In Safety Code

High-Visibility YELLOW—

Trucking equipment, conveyors and aisles at hazard points, edges of loading platforms and pits, railings, low beams, floor-pan edges, aisle obstructions, protruding parts, curbings, dead ends, stairway approaches, floor-level changes, chain-hoist blocks, risers of off-standard steps.

Alert ORANGE—

Exposed parts of: pulleys, gears on pickers and looms, cutting devices and shears. *Interior surfaces of:* electrical switch boxes, fuse boxes, power boxes, machinery guards.

Safety GREEN—

To identify: first-aid rooms, stretchers, cabinets for gas masks, cabinets for respirators, cabinets for medical supplies, safety showers for chemical burns.

Fire-Protection RED—

Fire-protection equipment: extinguishers, hose connections, apparatus, alarm stations, fire hose, hydrants, fire doors, fire blankets.

Precaution BLUE—

Electrical controls, valves, dryers, scaffolding, vats, boilers, compressors, tanks. *Use blue circle to prevent operation of:* cards, frames, looms, pickers.

Traffic WHITE—

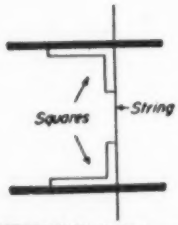
Traffic controls, storage areas, waste receptacles, aisle markings, corners, floor areas immediately surrounding waste receptacles.

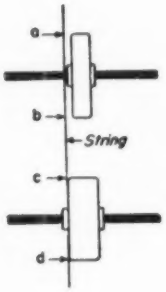
Handling Equipment for Textile Mills

Materials handled in textile mills	Hand-operated					Power-operated									
	Dollies	Hand trucks	Hand lift trucks	Wheeled trucks	Racks	Bins	Chain belts, bucket	Chain conveyors	Chain conveyors, overhead	Conveyors, belts or roller	Overhead hoists	Pallets	Pneumatic pipes	Racks	Stackers	Trucks, fork lift
Bales		•	•					•	•	•	•			•	•	•
Balls, sliver				•	•	•	•		•	•				•		•
Bags		•	•					•	•	•	•			•	•	•
Beams, section	•		•		•				•		•			•	•	•
Beams, warp	•		•		•				•		•			•	•	•
Bobbins, roving				•		•	•		•	•						•
Bobbins, yarn				•		•	•		•	•						•
Bundled goods				•		•	•		•	•						•
Cans, sliver				•					•			•				•
Cloth, piece form				•		•			•			•				•
Cloth rolls	•	•	•		•			•	•		•			•	•	•
Cloth, bolts			•	•					•	•	•	•			•	•
Cloth, rope form				•		•										•
Cones				•		•	•	•	•	•		•				•
Laps					•			•	•		•			•		•
Skeins				•	•	•	•		•	•		•				•
Spools				•		•	•	•	•	•				•		•
Spools, jack					•				•		•	•		•		•
Stockings and socks				•		•	•		•	•					•	•
Raw stock				•		•	•		•	•	•		•			•
Raw dyed stock				•		•	•		•	•	•		•			•
Waste, soft and hard				•		•	•		•	•	•		•			•

Belt Maintenance

If a belt is properly chosen, the important elements in giving it long life are correct pulley alignment, correct tension, periodic inspection, and proper dressing.

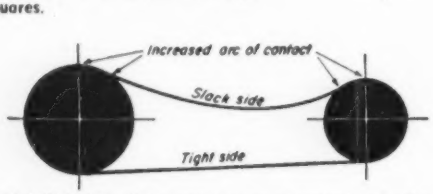




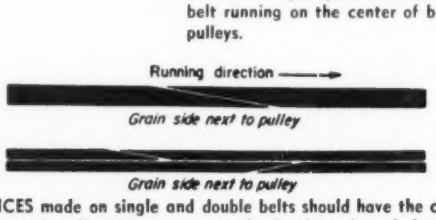
TO DETERMINE if shafts are parallel, place a tight string between the shafts and check with large squares.

TO CHECK alignment of pulleys, use a string along their edges. If pulleys are the same width, the string should touch the rims of the pulleys at four points. For pulleys of different widths, the distance from the string to the rim of smaller pulley should be the same at both points.

CORRECT ALIGNMENT of wide and narrow pulleys will show the belt running on the center of both pulleys.



A SLACK BELT will increase the arc of contact on both pulleys and may reduce belt slippage.



SPLICES made on single and double belts should have the correct running direction to prevent the feather edge of the lap from being lifted by air currents.

Causes and Remedies for Belting Troubles

Trouble	Cause	Remedy
1. Belt slips and squeals	(a) Belt too loose (b) Insufficient belt capacity (c) Pulley crown too high and causes increased wear of narrow center section of belt (d) Leather surface too dry and shiny	(a) Increase belt tension (b) Use thicker or wider belt (c) Decrease crown taper to 1/8 in. per ft. (d) Apply suitable dressing
2. Excessive belt stretch	Belt capacity too low	Use thicker or wider belt
3. Belt runs crooked	Belt stretched on one side by forcing over pulleys Belt ends not squared in joining Belt unevenly stretched by running misaligned pulleys Loose belt unevenly stretched by running up on flanged or stepcone pulley	Repair damaged belt section or replace belt; eliminate physical cause when installation is made
4. Belt runs off pulleys	(a) Misalignment of pulleys or shafting (b) Crooked belt (c) Pulley crown too high	(a) Check alignments and correct if needed (b) Repair belt (c) Decrease crown taper to 1/8 in. per ft.
5. Belt runs to one side of driven pulley	(a) Belt too slack (b) Load too great (c) Crooked belt (d) Misalignment of pulleys or shafting	(a) Increase belt tension (b) Use thicker or wider belt (c) Repair belt (d) Check alignment
6. Belt ships and flaps	Pulsating load or power source Shaft, motor, or machine not rigidly supported Lopsided pulley Bent shaft Too much or too little belt tension	Eliminate cause where possible; try change of Speed or addition of flywheel to smooth out load
7. Belt weaves back and forth across pulley	(a) Wobbly pulley (b) High spot on pulley (c) Belt extremely crooked	(a),(b) Correct faulty condition (c) Repair or replace belt
8. Cracked outside ply	(a) Excessive belt tension (b) Pulley diameter too small	(a) Reduce tension (b) Provide proper pulley for belt thickness
9. Cracked inside ply	Burning caused by excessive slip	See Item 1
10. Peeling grain	(a) Excessive slip (b) Improper belt dressing (c) Chemical fumes or oil	(a) See Item 1 (b) Clean belt with commercial solvent, scrape off any loose grain and use suitable dressing (c) Provide guards if possible, and use type of belt suited for conditions

Stainless-Steel Maintenance

By GRANT L. SNAIR JR., Research Laboratory, Allegheny Ludlum Steel Corp.

4 Points To Keep In Mind About Your Stainless-Steel Equipment

1. Heat-tint removers will usually scratch stainless steel surfaces. These products, however, are necessary in removing heat tint by hand.
2. Ozite, a fibrous material, may be used in place of metal sponges or cloth pads for applying cleansers and polishes. This material is particularly effective in aiding in the removal of milkstone.
3. For heavy hard-water deposits, 15 to 20% (by volume) nitric acid is very efficient. Acid treatment should be followed by a thorough water rinse.
4. The action of soldering fluxes should be neutralized immediately with a 5% sodium-carbonate solution, followed by a water rinse.

10 Good Rules To Observe In Stainless-Steel Maintenance

1. Between batches, rinse equipment thoroughly with hot water or steam.
2. Do not allow acid or chloride solutions to dry on equipment.
3. Wash equipment extra well before any period of extended idleness.
4. Passivate circulating or pressure equipment occasionally with a warm 10% nitric-acid solution.
5. Eliminate corrosion by periodic passivation of all equipment by exposure to clean air.
6. In diazotizing, always mix sodium nitrite into the bath before adding HCl or H_2SO_4.
7. For heavy cleaning, use only *stainless* steel wool or brushes.
8. Remove any iron rust deposits with a 2 to 5% solution of warm oxalic acid, followed by a 5% solution of caustic or washing soda.
9. Keep wood and stainless joints painted with an asphaltum or zinc-chromate primer.
10. Wash stainless-steel laboratory equipment thoroughly with water after cleaning with acid solutions of sodium dichromate.

Types 304 and 316 Are Principal Stainless Steels For Textile Applications

Of the many available stainless steel grades, Types 304 and 316 are selected predominantly for textile mill equipment, although many of the other grades with special properties provide exceptional service in a great variety of applications. Types 304 and 316 are best adapted for most mill equipment by virtue of their corrosion resistance, physical properties, and ease of fabrication. Basically, both of these alloys contain 18% chromium and 8% nickel.

10 Cleansers (for use only on tightly adhering deposits) And Their Effect on Stainless-Steel Surfaces

	Tradename	How to apply	Effect on finish
1	Grade FFF Italian Pumice, Whiting, or Bon Ami	Scour or rub with a damp cloth	Satisfactory for all finishes. Will burnish 2B finish slightly.
2	Liquid NuSteel	Scour with small amount on a dry cloth	Satisfactory for all finishes if rubbing pressure is light.
3	Paste NuSteel or Temp	Scour with small amount on a dry cloth	Satisfactory for No.4 finish. Will scratch mirror-finish No. 8. Good for heat-tint removal.
4	Household cleansers, such as Old Dutch, Lighthouse, Sunbrite, Wyandotte, Bab-O, Gold Dust, and Sapolio	Rub with a damp cloth	Will scratch No. 4 and 2B finishes slightly. Good for heat-tint removal.
5	Grade F Italian Pumice	Rub with a damp cloth	Will scratch No. 4 finish slightly.
6	Cooper's Stainless-Steel Cleaner	Rub with a damp cloth	Satisfactory for No. 4 finish.
7	Allen Stainless-Steel Polish	Rub with a damp cloth	Scratches considerably, but leaves mirror reflection. Excellent heat-tint remover.
8	5% Oxalic Acid (warm). Always follow with a 5% sodium-carbonate or neutralizer rinse	Swab or immerse	Good discoloration remover.
9	5 to 15% caustic soda (hot or cold), 0.1 to 0.5% solutions of sodium metasilicate, trisodium phosphate, sodium metaphosphate, or sodium pyrophosphate	Swab on	Removes grease, oil, and milkstone.
10	Organic solvents, like carbon tetrachloride, trichlorethylene, acetone, kerosene, gasoline, naphtha, benzene, ether, alcohol	Swab on	Removes oil and grease.

What You Should Know About Lubricants

Lubrication begins with the selection of lubricants. Effective lubrication comes from studying the machinery to be lubricated, the conditions under which the lubrication must function—type of bearings, speed of shafts, amount of lint that adheres to the bearing surfaces, etc.—and the way the lubricant must be circulated or applied.

To select lubricants most intelligently, it is necessary to be informed on their physical characteristics and what their significance means to each service involved. Laboratory tests are used to determine these characteristics and also to obtain some idea of how an oil may perform in service.

Lubrication-oil characteristics are:

1. Gravity. Gravity is of significance as a measure of the unit weight of certain petroleum products. It is normally of no value as an index of lubricating ability. It is of use only as an indication of the crude base from which such products have been derived.

2. Viscosity. Viscosity is the property possessed by all liquids that serves as a measure of their ability to flow and an indication of the extent to which internal or fluid friction must be considered. The heavier the oil, the higher will be its viscosity.

The use of an oil of too light a viscosity or one too light in body may lead to metal-to-metal contact and wear if the oil film is too thin to carry the prevailing loads.

The use of too heavy an oil may lead to power losses as a result of the inherent sluggishness of such an oil.

The viscosity of lubricating oils for plant service is generally measured at 100 and/or 210° F. The viscosity of lighter oils (for example, turbine grade) is measured at 100° F.

Heavier products such as steam-cylinder oils or gear lubricants are tested at 210° F.

Viscosity charts can be secured from most major oil companies.

Other oil characteristics of lesser importance are: flash point, fire point, pour test, carbon residue, emulsification, demulsibility, etc.

The three principal characteristics of greases are:

1. The base. The term base is indicative of the type of soap used in the manufacture of a grease. In plant service, the chief concern is with products of soda or lime base or specialty greases containing other metallic soaps such as aluminum, lithium, barium, or lead. These greases are intended for more specific uses.

2. The dropping point. Heat causes a grease to soften. The temperature at which it passes from a semisolid to a so-called liquid state is called the dropping point.

The dropping point is controlled by the percentage of soap present, the nature of the fatty oil, and the type of alkali.

The dropping point of a grease does not indicate the maximum temperature at which it can be used. Ordinary cup greases, for example, in which the oil and soap are held together or stabilized by means of water, have dropping points around 200 to 225° F.; yet they often will not stand up at temperatures continuously above about 175° F., since continued subjection to heat of even this intensity causes vaporization of the water. Eventually the grease separates, and soap and oil result.

In contrast, there are some greases that can be used for short periods of time even above their dropping points provided the bearing housing is sufficiently tight to prevent leakage of the fluid grease.

The dropping point of grease should be used primarily as an indication of uniformity of manufacture and as a means of identifying greases.

The best way to determine the high-temperature performance of a grease is to have it tested in a laboratory under simulated field conditions or by actual service in the units it is designed to lubricate.

3. Penetration. Penetration is a measure of the consistency and texture of a grease. The harder the grease, the lower will be the penetration or the harder the consistency.

Machines where lubricants are to be used are the determining factor in selecting the lubricants to be used.

Machine factors involved are bearing alignment, oil grooving, pressure control, circulating oiling systems, and plain or antifriction bearings. Each type of bearing, each oiling system, and each machine application calls for its own special lubricant.

Plant Engineering Handbook
McGraw-Hill Book Co.

Handy Everyday Formulas for Engineers and Mechanics

Power Transmission by Shaft

$$\text{Hp.} = [\text{Torque (in ft. lbs.)} \times \text{rpm.}] \div 5250$$

Power To Drive Pumps

$$\text{Hp.} = \frac{\text{Gals. per min.} \times \text{total head (including friction)}}{3{,}960 \times \text{efficiency of pump}}$$

Where:

$$\text{approximate friction head (ft.)} = \frac{\text{pipe length (ft.)} \times [\text{velocity of flow (ft. per sec.)}]^2 \times 0.02}{5.367 \times \text{diameter (ins.)}}$$

Efficiency = 0.50 to 0.85

Power To Hoist a Load

$$\text{Hp.} = \frac{\text{weight (lbs.)} \times \text{ft. per min.} \times \theta}{33{,}000}$$

θ = angle of hoist with horizontal

Power for Elevators

$$\text{Hp.} = \frac{\text{unbalanced load (lbs.)} \times \text{speed (ft. per min.)}}{33{,}000 \times \text{efficiency}}$$

Efficiency = approximately 0.50

Losses in Duct-System Entrances

Losses in duct-system entrances are usually given in terms of the velocity pressure existing in the duct following the entrance connection. These losses vary between 3% (for smooth well-rounded entrances) and 80% (for sharp unflanged entrances) of the duct velocity pressure.

Refrigeration Heat Absorption

One ton of refrigeration is the heat equivalent to the melting of one ton of ice at 32° F. in 24 hrs. A ton of refrigeration absorbs 200 Btu. per min.

Current Required by D.C. Motors

$$\text{Current (amps.)} = \frac{\text{Hp.} \times 746}{\text{voltage (volts)} \times \text{efficiency (decimal form)}}$$

Approximate rule for 230-v. motors: 4 amps. per hp.

Watt-Hour Meter Calculations

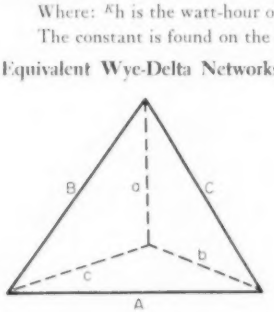
Revolutions of disk $\times$ K_h = watt-hours

Rpm. of disk $\times$ 60 $\times$ K_h = watts through meter

Where: K_h is the watt-hour or disk

The constant is found on the meter nameplate

Equivalent Wye-Delta Networks



$$K_1 = A + B + C$$

$$K_2 = ab + bc + ac$$

$$a = \frac{BC}{K_1} \qquad A = \frac{K_2}{a}$$

$$b = \frac{AC}{K_1} \qquad B = \frac{K_2}{b}$$

$$c = \frac{AB}{K_1} \qquad C = \frac{K_2}{c}$$

Westinghouse Electric Corp.

Recommended Intensity of Illumination

Department	Foot candles	
	General	Local
Storage	5 to 10	
Opening and picking	10 to 20	
Carding	20 to 40	
Roving	35 to 40	
Spinning	35 to 40	
Twisting	35 to 40	
Mule spinning	50 to 55	
Throwing	30 to 35	
Winding	30 to 35	
Slashing	25 to 30	100
Warping	30 to 35	100 to 150
Weaving	25 to 50	100
Drawing in	25 to 30	100 to 200
F.-F. knitting	35 to 40	
Circular knitting	35 to 40	
Looping	35 to 40	100 to 200
Seaming	35 to 40	100 to 200
Cloth inspection	30 to 35	100 to 200
Knit-goods inspection	30 to 35	100 to 200
Narrow-fabric inspection	30 to 35	150 to 250
Printing	30 to 35	75 to 150
Perching	30 to 35	100 to 250
Shading	30 to 35	100 to 150
Machine shop	25 to 30	100 to 300

NOTE: *Higher figures apply to work with dark threads or cloth.*

Approximate Power Required for Cotton Machinery

Machine	Horsepower
Bale breaker	3 to 5
Vertical opener	5 to 7.5
Lattice opener	3 to 5
Horizontal cleaner	2
Fans	5 to 20
Condensers	1 to 5
Distributors	1
Automatic feeders	2
Card and picker waste cleaner	5
Roving waste machine	7.5 to 35
One-beater breaker picker	7.5
One-beater finisher picker	5
Two-beater breaker picker	10
Two-beater finisher picker	10
One-process pickers, three beaters	17.5
Cotton card	1 to 1.5
Sliver lapper	0.5
Ribbon lapper	1
Comber with condenser (eight head)	3.0
Evener drawing frame, per delivery	0.33
Drawing frame, per delivery	0.25
Slubber (40 to 45 spindles)	1
Intermediates (55 to 60 spindles)	1
Roving frame (70 to 85 spindles)	1
Jack (100 spindles)	1
Ring spinning frame (30 to 50 spindles)	1
Ring twister (10 to 50 spindles)	1
Spooler (100 spindles)	1
Beam warper	0.25
Ball warper	0.50
Slasher	5
Winders (60 to 100 spindles)	1
Automatic loom	
to 32 ins.	0.50
36 to 48 ins.	0.75
50 to 80 ins.	1.00
82 to 120 ins.	1.50

From Standard Handbook for Electrical Engineers, 8th Edition, edited by A. E. Knowlton, 1949. McGraw-Hill Book Co.

Don't Overlubricate Antifriction Bearings

Purpose of Lubrication

It doesn't take much grease to keep ball bearings rolling.

There are only two reasons why a ball bearing needs lubrication at all:

1. To protect the finely finished surfaces from rust and corrosion

2. To prevent friction between the ball complement and retainer (ball separator)

The oiling needs of antifriction bearings contrast sharply with the needs of plain or babbit bearings. Plain bearings need oil to build up a film between the moving parts so that the bearings will operate. The speed that can be developed on plain bearings and the load that can be carried depend directly on the effectiveness of the lubricating system. With antifriction bearings, proper lubrication means the bearing will last longer.

How Much Lubrication?

The main problem in antifriction bearings is overlubrication—not lack of lubrication.

Generally, an antifriction bearing uses little lubricant. When a bearing is overlubricated, the bearing runs hot. Bearings run with a higher temperature within the bearing more often from too much lubricant than from not enough.

When plain bearings were the only type used, manufacturing plants employed oilers, armed them with grease and oil cans, and let the oilers fill every grease fitting and every oil opening. Plain bearings required this attention.

Today, the best treatment a man can give a machine equipped with antifriction bearings is to forget it's there. Plain bearings took a lot of oil; antifriction bearings don't.

When grease is used, housing should be filled from one-third to one-half full so that the grease level will be just high enough for the lower section of the balls to pass through. If a housing is too full, the soft grease will churn, which will result in heat from internal friction.

What Grease?

Look for consistency in grease for antifriction bearings. Grease should be a little stiffer than Vaseline. No. 2 or 3 automobile grease is good. A grease of this consistency is stiff enough not to churn at high speeds, yet soft enough not to dry.

The grease should be free from solids or body-giving materials—such as talc, graphite, or ground pumice—that act as abrasives after the oils evaporate.

Mineral-base greases (soda soap or lime soap), not vegetable or animal greases, should be used. Lime-base grease is preferred where a nonsoluble grease is required. Soda-base grease is a better all-round lubricant.

Oil or Grease—Which?

If the bearing housing was designed for oil, always use oil; if it was designed for grease, use grease.

Grease is good up to 4,000 rpm. It stays in the housing, and it helps to seal the housing against dirt.

If the bearing speed is above 4,000 rpm., oil is better, particularly if a circulating or splash system is used.

At higher speeds, most greases break down; the oil separates from the grease, leaks out of the housing or evaporates, and leaves undesirable caked solids.

There is one exception to this general rule. Special greases for special applications (high-speed grinding and boring spindles) have been developed to operate successfully at super-high speeds.

Grease and Oil—How Often?

Greases and oils should be added to bearings according to the severity of service conditions. No fixed rule can cover all applications, but oil should be added more often than grease.

Add oil at least once or twice a month. Add grease once a month.

The Antifriction Bearing Distributors Association

Select Textile Drive Motors by Acceleration Requirements

By F. D. SNYDER, Westinghouse Electric Corp.

The acceleration requirements for the different machines in a textile plant vary so greatly that one general type of motor cannot be economically applied to all types of machines. A few things to consider in selecting the correct motor for your needs are:

1. The rate of acceleration required
2. How often the machine is started
3. How much jogging the starting requires
4. The starting safety factor involved

The acceleration requirements for drive motors can be determined only by studying the requirements of the machine itself and then matching motor and drive characteristics as closely as possible.

The first requirement in determining the type of drive to be used is a thorough understanding of the machine and process.

The control of acceleration (starting of machines) is important because it affects such things as workloads, quality of products, and machine maintenance.

Seven Questions To Determine Machine Requirements

In determining the machine requirements, it is necessary to have a clear picture of the problems involved. Ask yourself these questions:

1. Does the rate of acceleration mean anything in the economical operation of the machine?
2. Is a slow, smooth break-away sufficient, or does the acceleration need to be slow and smooth from the starting time to operating speed?
3. How often does the machine have to start?
4. Is accurate position jogging involved, and how many consecutive jogs are required?
5. Will the operating speed or load on the machine be changed greatly so that the starting torque will be affected?
6. What is the safety factor required to take care of voltage regulation, temperature changes, or other transient conditions? How important is the safety factor?
7. Is controlled acceleration required to save the machine itself or the product?

If controlled acceleration is required to save the machine, use completely automatic controls. If broken ends at starting is the only problem, the operator can usually be depended upon to jog the machine along during starting, which will result in simple, low-cost control.

To make an intelligent selection of motor, control, and drive, compare the machine requirements with the capabilities of the various available types of equipment.

Since the induction type of a.c. motors fits the needs of most textile machines, let's talk about these motors. The standard squirrel-cage motor costs less than other motors suitable for use in the textile industry and should be used whenever possible.

There Are Three Standard Motors To Choose From

The National Electrical Manufacturers Association—NEMA—has set up a series of standards for squirrel-cage motors. The most common motors of these NEMA types are:

1. The NEMA-B
2. The NEMA-C
3. The NEMA-D

The NEMA-B squirrel-cage motor is considered the standard motor. If no motor specifications are given by the buyer, this motor is generally supplied by all motor manufacturers.

The NEMA-B is almost always the most efficient motor available. It is also rugged enough to meet most emergency load and voltage conditions. It handles momentary overloads of as high as 250% smoothly.

This motor has ample torque for its normal load when the voltage drops as much as 10%. At this time, the available torque is only 81% of the full-voltage torque.

Use the NEMA-B motor, with a standard full-voltage starter, on all applications where this amount of starting torque is ample and the rate of acceleration is not important.

Since this motor draws a large starting current, use caution where the time required to bring the machine up to operating speed is greater than 8 or 10 secs. or where starting is frequent.

The NEMA-C motor has a speed torque somewhat higher than that of the NEMA-B. The maximum or pull-out torque, however, is somewhat smaller.

The NEMA-C motor is often misapplied because the motor is not generally understood.

NEMA-C and NEMA-D Motors Are Limited in Application

The NEMA-C motor is made for applications that require a high break-away torque but a relatively small amount of inertia to accelerate. There are few such applications in the textile industry. A heavily loaded, slow-moving conveyor belt is an ideal place for a NEMA-C motor.

Never use this motor on applications where a large mass must be accelerated and where a long starting time is required because its high-resistance winding will quickly overheat. A card is a good example of a machine application where a NEMA-C motor should not be used.

The NEMA-D motor has many uses not fully appreciated. This motor can be applied with good results to feed aprons for pickers, worsted combers, many types of winders, centrifugal extractors, and to other applications where frequent starting or reversing is required.

The NEMA-D motor has a high-resistance rotor winding. This quality produces a high-starting torque with a comparatively low-starting inrush. The speed torque gives maximum starting torque at the stand-still position. The current inrush during starting is about 50% of that of a NEMA-B or -C motor.

The motor slips at full or normal loads. As a result, the efficiency of this motor is low at steady running.

NEMA-B Motors With Controls Provide Several Torque Values

To completely solve problems such as selecting motors for roving frames, use the standard NEMA-B motor with suitable controls. In fact, the NEMA-B motor, if suitably controlled, will provide almost any starting and accelerating torque desired.

By inserting resistors or reactors in the line feeding the motor, the speed-torque curve of the motor can be reduced to a lower value. The resistance or reactance taps can be adjusted to obtain the exact starting torque and, therefore, the exact accelerating torque desired.

This type of control requires special and more expensive apparatus; but it makes available, automatically and instantaneously, the full excess capacity of the standard NEMA-B motor.

The starting torque can be adjusted to any value desired on a normal roving frame. At the instant of starting, the desired torque value is applied. If the frame does not start because of interference by some transient condition, the motor will simply wait a few seconds until full voltage is applied and then be on its way. Within minutes, the condition may be normal again, but there have been no costly delays.

Recently a new scheme of motor control has been used for controlled acceleration that promises to provide advantages over previous methods. This method, the part-winding starting scheme, employs two groups of motor coils connected in two parallel stars.

When part-winding starting is used, the motor torque is automatically controlled to give any torque value necessary for jogging the frame; and then the contactor picks up to operate the motor as a normal NEMA-B motor. The motor has all the pull-out and overload capacity of a standard motor.

Furthermore, in case of unusual conditions when a frame does not normally start, such as a stiff frame on a cold morning or low voltage, the motor merely waits until the second contactor picks up to provide the full NEMA-B torque; and the machine starts.

To start and run a card with a direct motor drive, a cross between a NEMA-B and NEMA-D motor is desirable.

8 Enemies of Electric Motors

If your electric motors aren't all new ones, this information will help you to operate them with a minimum of attention and with low repair costs.

The motor enemies are:

1. Dust

Dust settles on motor housings, windings, slip rings, and commutators and works its way into the bearings.

On windings, dust works as a layer of insulation and confines heat until the insulation reaches dangerous temperatures. Dust also plugs ventilation spaces to interfere with proper cooling.

On slip rings and commutators, dust acts both as an abrasive and as an insulator. It multiplies wear and blocks the full passage of current.

Once inside the bearings, dust is as harmful as sandpaper to the highly polished surfaces.

The most serious threat that dust holds to the life of a motor is to fill the open spaces in the windings. When filled with dust, the whole wound section becomes a sponge to soak up harmful oil, moisture, and acid fumes.

2. Stray Oil

Since oil fights friction, it is often called the lifeblood of motors. And inside your bearings, that's exactly what it is. But outside the bearings, oil is strictly poison to electric motors.

Just as dust soaks up stray oil, stray oil soaks up dust. When both oil and dust cover a commutator, good commutation is prevented; the faces of brushes become glazed and packed with dirt, and harmful sparking results.

Oil also harms commutators by deteriorating the mica insulating segments between bars.

Oil is extremely harmful to the insulation on windings. Once a winding is thoroughly soaked with oil, the motor is in immediate danger of burning out or breaking down, and the soaked winding has to be rewound.

Oil is most dangerous to a motor when it is combined with dust in the windings to produce a greasy, gummy substance. The ventilation is stopped, the wires are under continuous attack from oil, metallic dust is held in the "gum," and the motor is in constant danger of shorting or grounding.

3. Moisture

The general aim of effective maintenance of electric motors is to keep motors completely dry.

If a motor cannot be placed in a dry place, moisture lodged in the motor should be removed as quickly as possible for two reasons:

a. Moisture soaks into and softens insulation slowly, and it is often possible to remove it before any damage is done.

b. Evaporated moisture is pure water and is at its least dangerous stage when it first condenses in a motor. Every extra hour that moisture stays in a motor gives the water more time to absorb harmful compounds and to become an active destructive agent.

4. Friction

No wear can take place within a bearing if the surfaces are smooth and properly lubricated. A film of oil keeps the wearing surfaces apart.

In actual practice, bearings often receive an insufficient supply of oil or oil that is wrong for the motor; grit gets into the oil and produces scraping; or a too-heavy load is put on the bearing, and the film of oil breaks down.

Preventing these conditions is one of the main jobs of motor maintenance.

5. Misalignment

Sprung or broken shafts, burned-out bearings, and overload failure are examples of motor damage caused by misalignment.

Misalignment is caused by settlement of foundations, heavy floor loading, excessive bearing wear, and other factors.

Alignment must be maintained if motors are to be maintained.

6. Vibration

Excessive vibration is destructive to motors. Vibration in a driven machine, careless servicing, loose motor-mounting bolts, and worn motor bearings can cause excessive motor vibration.

Vibration shakes motor parts and electrical connectors loose, crystallizes metals, and multiplies frictional wear.

Excessive vibration should always be tracked to its source and its cause eradicated.

7. Overload

A motor should never carry too great a mechanical load. Overloading can be caused by an obstruction in a driven machine (tight bearings, etc.), by excessive friction within the motor itself, or by trying to obtain greater output from the driven machine than the motor is capable of carrying.

If one of these conditions causes the current in a motor to exceed its nameplate current rating, motor heating will result and the insulation will be "fried," soldered connections melted, and bearings burned out.

8. Underload

Although the penalties are less severe, underloading an induction motor is just as clearly improper as overloading it.

Underloaded motors lose torque and are apt to overheat. Underload usually causes serious inefficiency to both the motor and utility lines.

Tackle your eight motor enemies, and you will find it easy to keep your motors humming. *Allis-Chalmers Mfg. Co.*

Transmission Calculations

PULLEYS

If two pulleys, A and B, are connected by a belt:

$$\frac{\text{rpm. of B}}{\text{rpm. of A}} = \frac{\text{cir. of A}}{\text{cir. of B}}$$

$$\frac{\text{rpm. of B}}{\text{rpm. of A}} = \frac{\text{dia. of A}}{\text{dia. of B}}$$

$$\text{diameter of A} = \frac{\text{rpm. of B} \times \text{dia. of B}}{\text{rpm. of A}}$$

Surface speed of pulleys

S.S. of A = rpm. of A × cir. of A

S.S. of A = 3.1416 × dia. of A × rpm. of A

$$\text{rpm. of A} = \frac{\text{S.S. of A}}{3.1416 \times \text{dia. of A}}$$

In a chain of pulleys, A, B, C, and D, in which B and C are on the same shaft and pulley A drives pulley D through intermediate pulleys B and C:

$$\frac{\text{rpm. of D}}{\text{rpm. of A}} = \frac{\text{dia. of A} \times \text{dia. of C}}{\text{dia. of B} \times \text{dia. of D}}$$

$$\text{rpm. of D} = \frac{\text{rpm. of A} \times \text{dia. of A} \times \text{dia. of C}}{\text{dia. of B} \times \text{dia. of D}}$$

GEARS

If two gears, driver-gear A and driven-gear B, run in mesh:

$$\frac{\text{No. of teeth in A}}{\text{No. of teeth in B}} = \frac{\text{rpm. of B}}{\text{rpm. of A}}$$

In a chain of gears:

$$\frac{\text{product of all driver-gear rpm.}}{\text{product of all driven-gear rpm.}} = \frac{\text{product of all driver-gear teeth}}{\text{product of all driven-gear teeth}}$$

BELT LENGTH

If two pulleys, A and B, are connected by a belt:

Straight belt

$$\text{length of belt} = \frac{3.1416 \times \text{dia. of A}}{2} + \frac{3.1416 \times \text{dia. of B}}{2} + 2 \times \text{C},$$

with C being the distance between the centers of A and B

Crossed belt

$$\text{length of belt} = 2 \times \sqrt{\text{C}^2 + \frac{(\text{dia. of A} + \text{dia. of B})^2}{4}} + \left(\frac{3.1416 \times \text{dia. of A}}{2} + \frac{3.1416 \times \text{dia. of B}}{2}\right)$$

TEXTILE ASSOCIATIONS

Alabama Cotton Mfrs. Assn., Montgomery, Ala.—T. P. Roberts, Pres.; Dwight M. Wilhelm, Exec. Vice Pres.

Alabama Textile Operating Executives—Harold M. Clark, Gen. Chairman; Cleveland L. Adams (Auburn), Sec.-Treas.

American Assn. of Textile Chemists & Colorists—Dr. H. C. Chapin (Lowell Technological Institute, Lowell, Mass.), Sec.

American Assn. for Textile Technology, Inc.—Walter E. Scholer, Pres.; Bernice S. Bronner (100 W. 55th St., New York 19, N. Y.), Sec.

Amer. Cotton Mfrs. Institute, Inc., Charlotte, New York, and Washington, D. C.—H. K. Hallett, Pres.; F. S. Love, Sec.-Treas.

American Cotton Waste Exchange, 222 Summer St., Boston, Mass.—Patrick J. Larkin, Pres.; Frank E. Hanington, Jr., Sec.-Treas.

American Lace Mfrs. Assn., Inc., 212 Turks Head Bldg., Providence 3, R. I.—Gordon Bucknam, Pres.; Edward F. Walker, Exec. Dir.

American Silk Council, Inc., 489 Fifth Ave., New York 17, N. Y.—Frank W. Kunze, Pres.; Alvin Barber, Sec.

American Society of Mechanical Engineers, Textile Div.—A. B. Studley, 160 Washington St., N., Boston, Mass., Northern Rep.

American Society for Quality Control, Textile Div.—Gardner Halles (Sylacauga, Ala.), Chairman; John Reynolds (P. O. Box 1113, Rome, Ga.), Sec.

American Society for Testing Materials, 1916 Race St., Philadelphia 3—R. J. Painter, Exec. Sec.

American Textile Machinery Assn.—Frederic W. Howe, Jr. (Worcester, Mass.), Pres; James E. Hollis, Jr. (Worcester, Mass.), Sec.

Asbestos Textile Institute, Rutgers University, Ceramics Dept., New Brunswick, N. J.—Dr. M. C. Shaw, Sec.

Assn. of Cotton Textile Merchants of N. Y., 40 Worth St., New York 13, N. Y.—W. Ray Bell, Pres.; John L. Severance, Sec.

Assn. of Cotton Yarn Distributors, 5th & Chestnut Sts., Philadelphia 6, Pa.—Frank E. Slack, Pres.

Assn. of Knitted Fabrics Mfrs., 1450 Broadway, New York 18, N. Y.—Jacob M. Wallerstein, Pres.; Jacob P. Rosenbaum, Exec. Sec.

Assn. of Narrow Fabrics Mfrs., Inc., 5th & Chestnut Sts., Philadelphia 6, Pa.—Frank E. Slack, Man. Dir.

Atlanta Textile Club, Atlanta, Ga.—W. H. Morrison, Pres.; Fred M. Corbett (632 Trust Co. of Ga. Bldg.), Sec.

Bobbin Mfrs. Assn., 741 Hospital Trust Bldg., Providence, R. I.—Matthew E. Ward, Sec.

Boston Wool Trade Assn., 263 Summer St., Boston, Mass.—Marland C. Hobbs, Sec.-Treas.

Brattice Cloth Mfrs. Assn., 40 Worth St., New York 13, N. Y.—F. C. Larson, Pres.; H. E. O'Neill, Sec.

Burlap & Jute Assn., 425 W. 25th St., New York, N. Y.—John C. Daly, Pres.; R. S. Carraway, Sec.

Canadian Assn. of Textile Colorists & Chemists—H. F. Parkinson (59 Toronto St., Guelph, Ont.), Sec. National Council; G. A. Farley (129 Cambridge St., Guelph, Ont.), Sec. Ontario Sect.; R. W. Redston (75 Highfield Ave., Mount Royal, Que.), Sec. Quebec Sect.

Canadian Woolen & Knit Goods Mfrs. Assn., 50 King St., W., Toronto, Ont.—W. M. Berry, Exec. Vice Pres.

Canvas Waterproofers Assn., P. O. Box 32, Poughkeepsie, N. Y.—E. L. Johnson, Pres.

Carded Yarn Assn., Inc., Johnston Bldg., Charlotte, N. C.—G. P. Barnwell, Pres.; E. O. Fitzsimons, Exec. Vice Pres.

Carpet Institute, Inc., 350 Fifth Ave., New York, N. Y.—Paul M. Jones, Pres.; King Hoagland, Sec.

Charlotte Textile Club, Charlotte, N. C.—T. W. Church, Jr. (300 E. 16th St.), Pres.; Frank P. Barrie (1005 W. Morehead St.), Sec.-Treas.

Chicago Yarn Men's Club, 222 W. Adams St.—Wm. C. Napier, Pres.; David F. Swain, Sec.

Combed Yarn Spinners Assn., Gastonia, N. C.—C. C. Dawson, Exec. Sec.

Committee D-13 on Textile Materials (ASTM)—W. H. Whitcomb (41 Norman Ave., Cranston, R. I.), Sec.

Cordage Institute, 350 Madison Ave., New York 17, N. Y.—DeWitt C. Schieck, Sec.

Cotton Institute of Canada, 50 King St., W., Toronto, Ont.—W. M. Berry, Exec. Vice Pres.

Cotton Mfrs. Assn. of Georgia—R. H. Jewell (Chickamauga), Pres.; T. M. Forbes (740 C. & S. Bank Bldg., Atlanta), Exec. Vice Pres.

Dominion Wool Dealers' Assn., 217 Bay St., Toronto 1, Ont.—C. V. Elliott, Pres.; W. J. Cannon, Sec.

Durene Assn. of America, 350 Fifth Ave., New York, N. Y.—A. C. L. Newsom, Exec. Sec.

Eastern Maine Woolen Overseers Assn.—James Halliday (Oakland), Sec.

Elastic Fabric Mfrs. Institute—E. B. Pomeroy (Box 710, New London, Conn.), Man. Dir.

Fall River Textile Mfrs. Assn., 57 N. Main St., Fall River, Mass.—L. R. Morley, Sec.-Treas.

Felt Assn., 74 Trinity Pl., New York, N. Y.— H. S. Blake, Jr., Exec. Sec.

Fiber Society, Inc.—J. T. Wigington (Clemson, S. C.), Sec.

Full-Fashioned Hosiery Mfrs. of America, 3701 N. Broad St., Philadelphia 40, Pa.—Richard F. Peden, Sec.

Green Mountain Textile Overseers Assn.—Elphege Keroach (Winooski, Vt.), Pres.; Guy Morse (Proctorsville, Vt.), Sec.

Greenville Textile Club, Parker High School, Greenville, S. C.—Alfred G. New, Pres.; D. W. Stevenson, Sec.

Hard Fibres Assn., 425 W. 25th St., New York, N. Y.—C. Ernest Tanner, Pres.; R. S. Carraway, Sec.

Hosiery Mill Representatives Club of Chicago—W. B. Gardner (222 W. Adams St.), Pres.

Hosiery Wholesalers National Assn.—L. Guzik (150 Broadway, New York 4, N. Y.), Counsel & Exec. Dir.

Independent Assn. of Stocking Mfrs., 11 N. Juniper St., Philadelphia, Pa.—E. M. Rand, Exec. Sec.

Knitting Machine Mfrs. Assn. of the U. S., 350 Fifth Ave., New York 1, N. Y.—K. W. Howie, Pres.; Beale J. Faucette, Sec.-Treas.

Maine Woolen & Worsted Assn.—John Garner (Kegan Falls), Pres.; Everett Greaton (Augusta), Sec.

Master Dyers Assn., Main St. & Walnut Lane, Philadelphia 27, Pa.—Lindsey H. Mason, Pres.; Graham J. Littlewood, III, Sec.

National Assn. of Cotton Mfrs., 80 Federal St., Boston, Mass.—William F. Sullivan, Pres.

National Assn. of Finishers of Textile Fabrics, 40 Worth St., New York, N. Y.—Joseph E. Hoesl, Sec.-Treas.

National Assn. of Hosiery Mfrs., 468 Fourth Ave., New York 16, N. Y.—Henry A. Lineberger, Chairman; W. F. Williamson, Pres.; Reuben C. Ball, Vice Pres. and Sec.

National Assn. of Lace Curtain Mfrs., 366 Madison Ave., New York, N. Y.—W. J. Parker, Commissioner.

National Assn. of Textile Printing Colorists, 465 Main St., Cambridge, Mass.

National Assn. of Waste Material Dealers, Inc., 271 Madison Ave., New York 16, N. Y.—Clinton M. White, Sec.

National Assn. of Wool Mfrs., 386 Fourth Ave., New York 16, N. Y.—Everett L. Kent, Pres.; Edwin Wilkinson, Exec. Vice Pres.; Glen F. Brown, Sec.-Treas.; and 80 Federal St., Boston 10, Mass., Walter L. Keane, Asst. Treas.

National Assn. of Woolen & Worsted Overseers—Francis D. Herbert (Yantic, Conn.), Pres.; James J. Burns (65 Wellesley Road, Holyoke, Mass.), Sec.

ORGANIZATIONS, SCHOOLS, AND SHOWS

TEXTILE ASSOCIATIONS *(Continued)*

National Canvas Goods Mfrs. Assn., Inc.—Donald A. Campbell (224 Endicott Bldg., St. Paul 1, Minn.), National Sec.; Lawrence H. Stevens (352 W. 53rd St., New York 19, N. Y.), Exec. Sec.-Treas.; C. J. Holgaard (30 Washington Ave., N., Minneapolis 1, Minn.), Pres.

National Cotton Council, Memphis, Tenn.—Harold A. Young, Pres.; Wm. Rhea Blake, Exec. Vice Pres. and Sec.

National Cotton Ginners Assn., 109 N. Second Ave., Dallas 1, Texas—George T. Hider, Pres.; Jay C. Stilley, Exec. Vice Pres.; Carl Trice Williams, Sec.-Treas.

National Federation of Textiles, Inc., 389 Fifth Ave., New York 16, N. Y.—Irene Blunt, Sec.

National Knitted Outerwear Assn., 386 Fourth Ave., New York, N. Y.—Milton Davis, Pres.; Sidney S. Korzenik, Exec. Dir.

National Safety Council, Textile Section, 425 N. Michigan Ave., Chicago 11, Ill.—Arthur S. Kelly.

National Textile Processors Guild, Inc., 51 Chambers St., New York, N. Y.—H. E. Kenworthy, Pres.; H. T. Greenwood, Jr., Vice Pres.; Harold Korzenik, Sec.-Counsel.

National Wool Trade Assn., 263 Summer St., Boston, Mass.—Marland C. Hobbs, Sec.-Treas.

New Bedford Cotton Mfrs. Assn., Masonic Building, New Bedford, Mass.—F. W. Steele, Exec. Sec.

New England Rayon & Synthetic Yarns Peddlers Assn.—Le Baron C. Anthony (15 Westminster St., Providence, R. I.), Pres.

New Hampshire Mfrs. Assn., Manchester, N. H.—Eliot A. Carter, Pres.; Philip M. Darling, Exec. Sec.

New York Assn. of Hosiery Mill Salesmen, 350 Fifth Ave., New York, N. Y.—Byron E. Bermas, Pres.

New York State Textile Overseers Assn.—George Noonan (Broadalbin), Pres.; Emil Tegtmeier (Stottville), Sec.

North Carolina Textile Mfrs. Assn., Inc., 812 Independence Bldg., Charlotte 2, N. C.—E. N. Brower (Hope Mills), Pres.; Hunter Marshall, Sec.-Treas.

Northern Textile Assn., 80 Federal St., Boston, Mass.—William F. Sullivan, Pres.

Phi Psi Fraternity—J. T. Wigington (Clemson, S. C.), Exec. Sec.

Philadelphia Textile Mfrs. Assn., Public Ledger Bldg., Philadelphia 6, Pa.—E. K. Pierson, Man. Dir. Free Employment Bureau, 4700 Frankford Ave., Philadelphia 24—W. W. Markel, Mgr.

Philadelphia Wool & Textile Assn.—H. J. Ferren (Phila. Wool Scouring & Carbonizing Co., Philadelphia 34, Pa.), Sec.

Plastic Coatings & Film Assn., 9 Rockefeller Plaza, New York 20, N. Y.—P. F. Johnson, Exec. Sec.

Primary Textiles Institute, 50 King St., W., Toronto, Ont.—H. G. Smith, Chairman; W. M. Berry, Exec. Vice Pres.

Rayon & Acetate Fiber Producers Group, 350 Fifth Ave., New York 1, N. Y.—Matthew H. O'Brien, Sec.

Rayon Information Center, 670 Fifth Ave., New York, N. Y.—Benjamin Wood, Exec. Dir.

Rhode Island Textile Assn., 212 Turks Head Bldg., Providence 3, R. I.—F. A. Cornell, Pres.; Edward F. Walker, Sec.-Treas.

Shenandoah Valley Textile Executives Assn., Oella, Md.—Richard Burton, Pres.; John J. Burger, Sec.

Silk & Rayon Institute, 50 King St., W., Toronto, Ont.—W. M. Berry, Exec. Vice Pres.

Silk & Rayon Mfrs. Assn., 1122 Sherbrooke St., W., Montreal, Que.—Ralph Hood, Pres.

Silk & Rayon Printers & Dyers Assn. of America, Inc., 1450 Broadway, New York, N. Y.—Dean M. Lewis, Pres.; Geo. F. Gaede, Sec.; Charles A. Grant, Exec. Sec.

Silk Commission Mfrs. Assn., 132 Market St., Paterson 1, N. J.—Herbert Susser, Exec. Sec. and Counsel.

Skein Dyers Assn. of America, 418 17th Ave., Paterson 4, N. J.—Baptiste J. Lanza, Pres.; Fred Kern, Sec.

Soft Fibre Mfrs. Institute—G. F. Quimby (9 Rockefeller Plaza, New York 20, N. Y.), Sec.-Treas.

Southern Hosiery Mfrs. Assn., Charlotte, N. C.—R. P. Shapard, Jr., Chairman; Taylor R. Durham, Pres. and Sec.

Southern New England Textile Club—Howard P. Derrickson, Pres.; J. Milton Brindley (1201 Lonsdale Ave., Saylesville, R. I.), Sec.

Southern Textile Assn., P. O. Box 1225, Charlotte, N. C.—James T. McAden, Jr., Sec.-Treas.

Textile Associates Club, 168 Hatfield St., Pawtucket, R. I.—Robert M. Loxsom, Sec.-Treas.

Textile Color Card Assn. of the U. S., Inc., 200 Madison Ave., New York 16, N. Y.—Margaret Hayden Rorke, Sec. and Man. Dir.

Textile Designers, Analysts & Technicians Assn., Fall River, Mass.—Frank Kustecki (West Warwick, R. I.), Pres.; M. J. Wayner (New Bedford, Mass.), Sec.

Textile Distributors Institute, Inc., 469 Seventh Ave., New York, N. Y.—Walter Ross, Pres.; Hilda A. Wiedenfeld, Exec. Sec.

Textile Export Assn. of U. S., 40 Worth St., New York 13, N. Y.—Matthew J. Cuffe, Pres.; John W. Murray, Sec.-Treas.

Textile Fabrics Assn., 40 Worth St., New York, N. Y.—W. P. Fickett, Pres.-Treas.; D. H. MacMillan, Sec.

Textile Mfrs. Assn. of South Carolina—M. C. Stone (Pacolet), Pres.; John K. Cauthen (Columbia), Exec. Vice Pres.

Textile Operating Executives of Georgia—Turner R. Scott (Silvertown), Gen. Chairman; Herman A. Dickert (Georgia Tech, Atlanta), Sec.

Textile Research Institute, Kingston Road, Princeton, N. J.—Publications Dept., 10 E. 40th St., New York 16, N. Y.; Paul C. Alford, Jr., Sec.

Textile Waste Exchange, P. O. Box 4547, Atlanta 2, Ga.—J. Earl Thompson, Pres.; John M. Bell, Sec.

Thread Institute, Inc., 11 W. 42nd St., New York, N. Y.—Josef Pollack, Chairman; David Snyder, Exec. Dir. and Sec.

Throwsters Group, Natl. Fed. of Textiles, Inc., 389 Fifth Ave., New York 16, N. Y.—John A. Anderson, Chairman.

Tufted Textile Mfrs. Assn., P. O. Box 362, Dalton, Ga.—Henry C. Ball, Exec. Vice Pres.

Underwear Institute, 2 Park Ave., New York, N. Y.—Roy A. Cheney, Pres.

United Knitwear Mfrs. League, 51 Chambers St., New York 7, N. Y.—Harry Katz, Pres.; Harold Korzenik, Exec. Counsel.

Warp Knit Fabric Mfrs. Group, Natl. Fed. of Textiles, Inc., 389 Fifth Ave., New York 16, N. Y.—John P. Holmes, Chairman.

Wholesale Dry Goods Institute, Inc., 40 Worth St., New York, N. Y.—Henry Matter, Exec. Vice Pres.

Wool Bureau, Inc., 16 W. 46th St., New York 36, N. Y.—Giles E. Hopkins.

Woolen Wholesalers National Assn.—L. Guzik (150 Broadway, New York 4, N. Y.), Counsel & Exec. Dir.

Woolknit Associates, Inc., 745 Fifth Ave., New York, N. Y.—Andre Bonte, Pres.; James J. Aylward, Sec.

Woonsocket Assn. of Mfrs., Woonsocket, R. I.—Henry Dursin, Pres.; J. C. Winn, Sec.-Treas.

Yarn Merchants Assn., Inc., 171 Madison Ave., New York, N. Y.—Jack Blumenson, Pres.; Seymour Middleton, Sec.

RESEARCH ORGANIZATIONS

American Assn. of Textile Chemists & Colorists, Research Laboratory at Lowell Technological Institute, Lowell, Mass.; Dr. H. C. Chapin, Sec.

American Society of Mechanical Engineers, Textile Div., c/o A. B. Studley, Northern Rep., 160 Washington St. N., Boston, Mass.—Committees to carry out applied research and studies of engineering problems relating to textile industry.

Eastern Regional Research Laboratory, Bureau of Agricultural and Industrial Chemistry, USDA, Chestnut Hill Station, Philadelphia 18, Pa.—P. A. Wells, Director.

Georgia Tech Research Institute, Atlanta, Ga.—Herschel H. Cudd, Sec. and Dir. of Research. Coordinates Georgia Tech research facilities for industries, associations, individuals, etc.

Institute of Textile Technology, Charlottesville, Va.—Jack Compton, Technical Director; T. L. W. Bailey, Jr., Director of Industry Relations. Research and technical service provided for member mills in textile technology; textile-literature-abstracting service.

Lowell Technological Institute Research Foundation, Lowell, Mass.—Basil G. Skalkeas, Director. Coordinating agency for all testing, development, and research conducted at Lowell Technological Institute. Agency employs both the institute faculty members, as part-time contributors, and full-time research workers. The research foundation operates as a nonprofit organization. Scope of activities: textiles, paper, leather, electronics, and plastics.

New England Textile Foundation, Providence, R. I.—George T. Metcalf (31 Canal St.), Exec-Sec. Promotes training of future textile executives in four New England textile colleges through scholarships.

Philadelphia Textile Institute Foundation, Inc., 3243 School House Lane, Philadelphia, Pa.—Nonprofit organization for textile education facilities.

J. E. Sirrine Textile Foundation—George M. Wright (Abbeville, S. C.), Pres.; J. K. Cauthen (Columbia, S. C.), Sec.-Treas. Dedicated to the advancement of textile education in South Carolina.

Southern Regional Research Laboratory, New Orleans, La.—Research on cotton principal activity; also work on cottonseed and other oilseeds, sweet potatoes, rice, peanuts, and sugar-cane products. Six field stations, administered by the laboratory, work on fruits and vegetables. Operated with Federal funds under Dept. of Agriculture guidance. Other USDA regional laboratories are also working on textile fibers.

Southern Research Institute, Birmingham, Ala.—William M. Murray, Jr., Director. Nonprofit industrial research institute offering services to clients in any location.

Textile Education Foundation, Inc.—Established by Cotton Mfrs. Assn. of Georgia, C. & S. Bank Bldg., Atlanta, Ga., to raise funds to promote textile education and research in Georgia and adjoining states. M. M. Bryan, Jr. (Jefferson Mills, Jefferson, Ga.) Pres.; Theo. M. Forbes (740 C. & S. Bank Bldg., Atlanta, Ga.) Sec.

Textile Research Institute, Kingston Road, Princeton, N. J.—J. H. Dillon, Director; J. H. Wakelin, Director of Research; Paul C. Alford, Jr., Sec. Fundamental research in fibers and fabrics, dissemination of textile research information, training textile scientists.

TEXTILE SCHOOLS

Alabama Polytechnic Institute, School of Textile Technology, Auburn, Ala.—Cleveland L. Adams, Head. Offers education in carding, spinning, weaving, dyeing, finishing; cotton and synthetics; leading to degrees in textile engineering, textile management, and textile chemistry and dyeing.

Bradford Durfee Technical Institute, Fall River, Mass.—Leslie B. Coombs, Pres. Offers B.S. degree with majors in textile styling, fashion illustration, and advertising design; chemistry and dyeing and finishing; engineering: civil, electrical, and mechanical; textile manufacturing. Evening extension courses in addition. Summer sessions.

Clemson School of Textiles of Clemson Agricultural College, Clemson, S. C.—Hugh M. Brown, Dean. Offers education in carding, spinning, weaving, knitting, dyeing, finishing, management; cotton, synthetics, and wool. Awards B.S. and M.S. degrees.

Fashion Institute of Technology, 225 W. 24th St., New York 11, N. Y. George E. Linton, Dean Textile Dept. Courses in basic textiles, fibers and fabrics, textile testing, quality control, textile design, merchandising, knitting.

A. French Textile School of Georgia Institute of Technology, Atlanta, Ga.—H. A. Dickert, Director. Offers education in carding, spinning, weaving, knitting, dyeing, finishing; cotton and synthetics.

Institute of Textile Technology, Charlottsville, Va.—L. H. Hance, Pres.; Jack Compton, Technical Director; W. H. Martin, Chairman, Committee on Academic Studies. Research and technical service provided for member mills in textile technology; academic program at the graduate-school level leading to M.S. degree.

Massachusetts Institute of Technology, Cambridge, Mass.—Prof. Edward R. Schwarz, in charge Div. of Textile Technology. Offers graduate instruction in textile research, and cooperative research facilities through Div. of Industrial Cooperation.

Lowell Technological Institute, Lowell, Mass.—Martin J. Lydon, Pres. Offers education in chemistry, engineering, general studies, and textile manufacturing. Departments include textile sales, textile chemistry, dyeing, finishing, cotton, synthetics, wool and worsted, design. Awards B.S. and M.S. degrees.

Mohawk Valley Technical Institute, Utica, N. Y.—Albert V. Payne, Acting Director. Offers education in textile engineering, fabric analysis and development, chemistry, dyeing and finishing, knitting, and weaving.

New Bedford Institute of Textiles and Technology, New Bedford, Mass., John E. Foster, Pres. Offers scientific education in textile engineering, textile chemistry, machine design, and textile design and fashion. Four-year degree courses.

North Carolina State College, School of Textiles, Raleigh, N. C.—Malcolm E. Campbell, Dean. Offers education in yarn manufacturing, designing, weaving, knitting, textile chemistry and dyeing; synthetics, cotton, and wool; also textile management. B.S. and M.S. degrees in textiles.

North Carolina Vocational Textile School, Belmont, N. C.—Chris. E. Folk, Principal. Offers education to textile employees in the State of North Carolina in carded and combed yarn manufacture, designing, weaving, knitting, mill maintenance, and tailoring.

Philadelphia Textile Institute, Philadelphia 44, Pa.—B. W. Hayward, Director; A. Ward France, Dean of Faculty; Donald B. Partridge, Dean of Students. Offers education in textile manufacture (including knitting), chemistry and dyeing; cotton, wool, synthetics, silk; gives B.S. in textile engineering, chemistry and dyeing, and knitting.

Rhode Island School of Design, Div. of Textiles, 14 College St., Providence, R. I.—W. D. Fales, Div. Chairman. Offers education in textile manufacturing; practical research, textile chemistry, dyeing, finishing; textile design, both woven and printed patterns; apparel design, B.S. and B.F.A. degrees.

Textile Evening Trade School, 351 W. 18th St., New York, N. Y.—Oscar Dombrow, Principal. Offers education in cotton converting, general textiles, synthetics, textile design, textile dyeing, weaving and design, woolens and worsteds.

Texas Technological College, Textile Engineering Dept., Lubbock, Texas—L. E. Parsons, Department Head. Offers education in textile administration, manufacturing, chemistry, and dyeing. Also engages in state and industrially supported research.

MACHINERY AND EQUIPMENT SHOWS OF INTEREST TO TEXTILE MILLS

American Textile Machinery Exhibition, Atlantic City Auditorium, Atlantic City, N. J. Sponsored by American Textile Machinery Assn. (93 Grand St., Worcester, Mass.) and held when that association directs. Managed by Campbell-Fairbanks Associates, 332 Park Sq. Bldg., Boston, Mass. Next of these shows scheduled for Apr. 26-30, 1954.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J. Sponsored by National Assn. of Hosiery Mfrs., National Assn. of Outerwear Mfrs., and The Underwear Institute; managed by Campbell-Fairbanks Associates, 332 Park Sq. Bldg., Boston, Mass. Held biennially in April of odd years. Next show scheduled for April, 1955.

National Materials Handling Exposition held in various cities. Managed by Clapp & Poliak, Inc., 341 Madison Ave., New York, N. Y. Next show scheduled for May, 1955, in Chicago, Ill.

AMA National Packaging Exposition held annually. Sponsored by American Management Assn., 330 W. 42nd St., New York, N. Y. Next show scheduled for April 5-8, 1954, at Atlantic City Auditorium, Atlantic City, N. J.

National Power Show held biennially. Managed by International Exposition Co., 480 Lexington Ave., New York, N. Y. Next show scheduled for Commercial Museum, Philadelphia, Pa., Dec. 2, 3, 4, 6, 7, 1954.

Plant Maintenance & Engineering Show held annually. Produced and managed by Clapp & Poliak, Inc., 341 Madison Ave., New York, N. Y. Next show scheduled for Jan. 25-28, 1954, International Amphitheatre, Chicago, Ill.

Southern Textile Exposition, Textile Hall, Greenville, S. C. Sponsored and managed by Textile Hall Corp. Held biennially in October of even years. Next show October 4-8, 1954.

Textile Dyeing & Finishing Exposition, sponsored by American Assn. of Textile Chemists & Colorists and held at various locations in conjunction with national convention of AATCC, usually in Sept., Oct., or Nov. Details can be secured from K. H. Barnard, Chairman, National Conventions Committee, AATCC, c/o American Cyanamid Co., Bound Brook, N. J.

MACHINERY, EQUIPMENT, and SUPPLIES

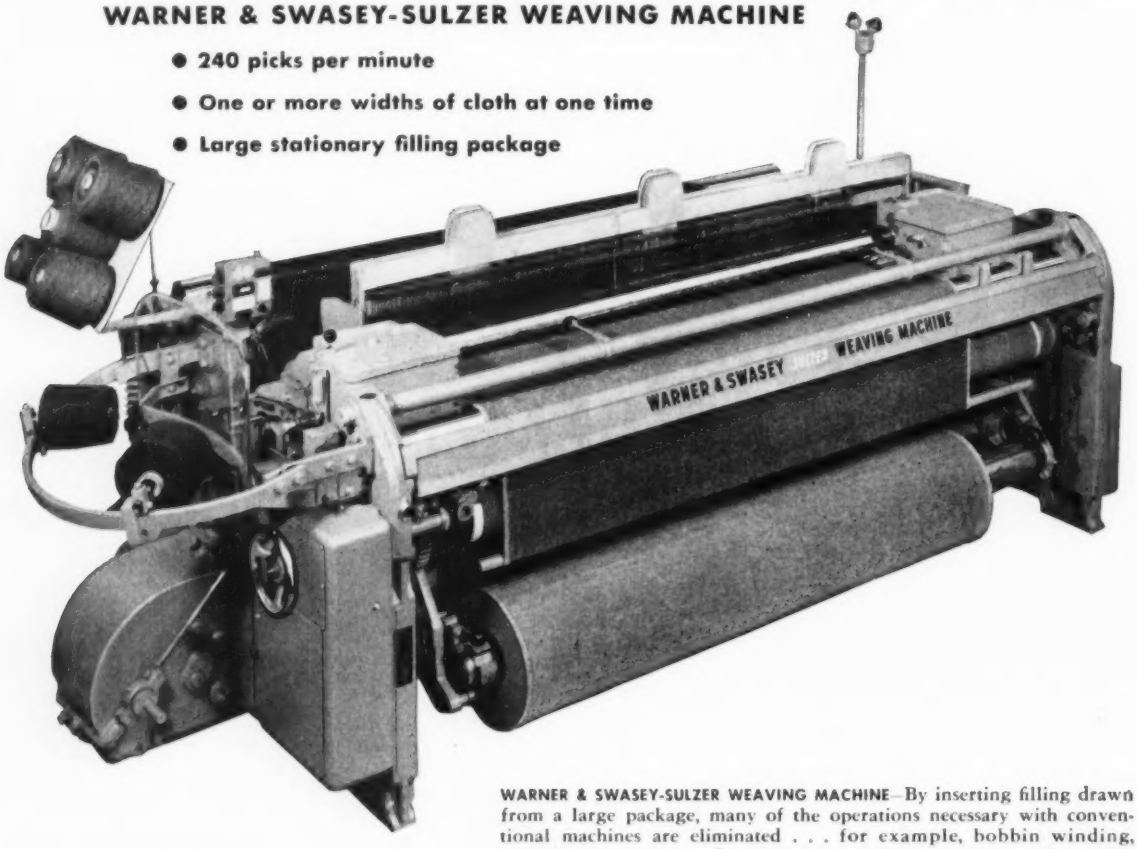
THE WARNER & SWASEY CO.

TEXTILE MACHINERY DIVISION

6910 Market St., Philadelphia, Pa. Candler Bldg., Atlanta, Ga. 1820 Browning Ave., Charlotte, N. C.

WARNER & SWASEY-SULZER WEAVING MACHINE

- 240 picks per minute
- One or more widths of cloth at one time
- Large stationary filling package



MODELS

M-2820	80" reed
M-2860	95" reed
M-2960	110" reed

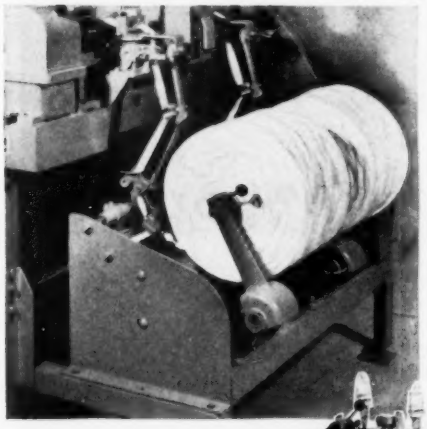
WARNER & SWASEY-SULZER WEAVING MACHINE—By inserting filling drawn from a large package, many of the operations necessary with conventional machines are eliminated . . . for example, bobbin winding, stripping, inspection, and storage. There is less transporting of material, yarn inventory is easier to control, and battery hands are eliminated. Mending is reduced and there are fewer seconds, and quality is higher. Overhead is less, because of savings in floor space and labor. Operating up to 240 picks per minute, production is greater. Reed widths are 80", 95", and 110", and one or more widths of cloth may be woven simultaneously to the full reed width.

Here is a dramatic comparison between the conventional and the new method of inserting filling. The wooden shuttle carrying little yarn which must be replenished frequently weighs almost two pounds . . . the new shuttle carries no yarn, but draws from a continuous supply.

THE WARNER & SWASEY CO.

TEXTILE MACHINERY DIVISION

SALES OFFICES: **5701 Carnegie Ave., Cleveland 3, Ohio 61 Rivulet St., North Uxbridge, Mass.**



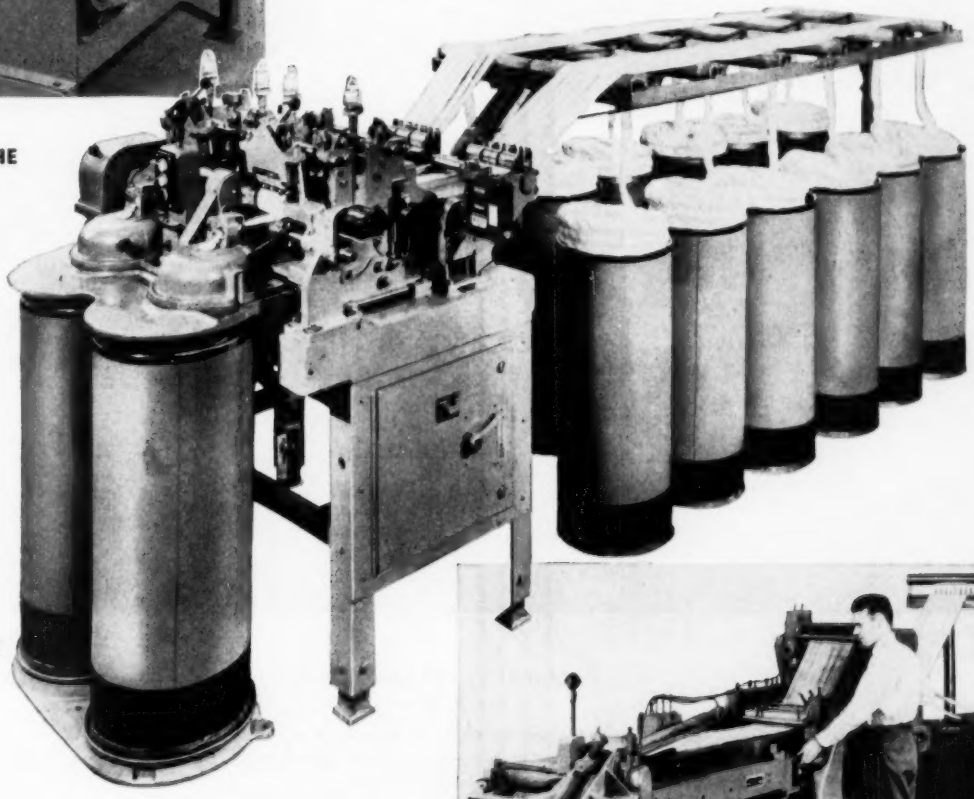
WARNER & SWASEY PIN DRAFTER – Designed for drafting operations prior to roving on straight wool, or blends of wool and synthetics, straight synthetic, or blends of two or more synthetics.

Through pin control the sliver is kept open until it is ready for the final drawing stages (reducing, roving, spinning) resulting in a well integrated quality end . . . using fewer operations than other types of drawing. Whether you use French, Bradford, or modified processing the Pin Drafter can be adapted to reduce the number of operations for equivalent evenness. Pin Drafted yarns have higher breaking strength, greater evenness, and better appearance.

The machine handles either combed sliver or ball top and discharges to coiler cans or balls at a constant input capacity of 1,800 to 2,000 gr/yd per head. A new balling head attachment puts a false twist in the sliver and delivers a 3 to 3½ ounce top. Balls are now doffed at a more convenient working height.

SINGLE MECHE BALLING DELIVERY

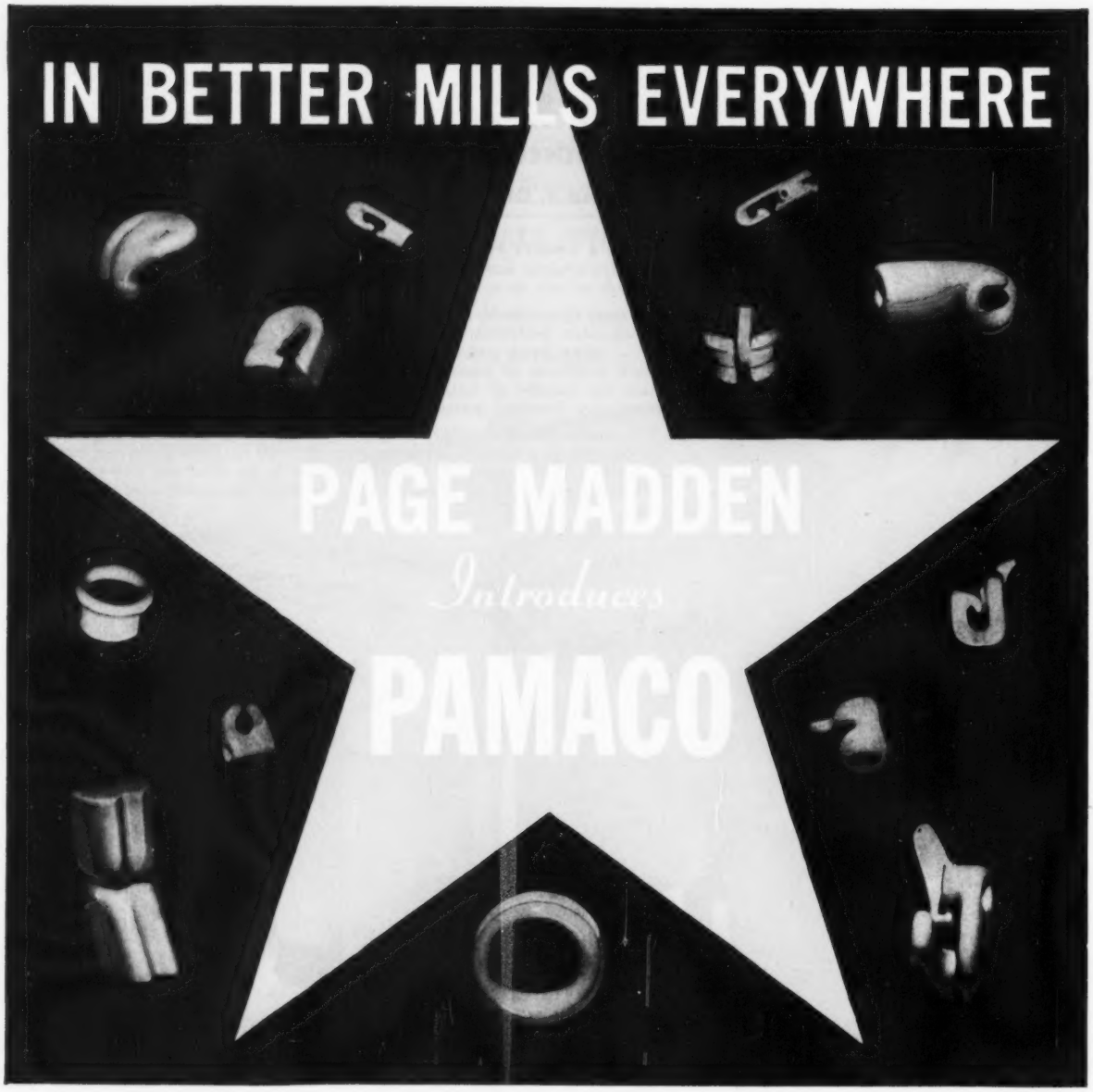
WARNER & SWASEY DUAL CAN DELIVERY PIN DRAFTER



WARNER & SWASEY-PACIFIC CONVERTER – In one operation, synthetic tow is cut to desired lengths, either uniform or varied, and, when desired, accurately blended with natural or other synthetic fibers. It emerges as crimped sliver at 100 to 180 pounds per hour. Eliminates blending, picking, carding, and gilling operations.

Use of the CONVERTER and the PIN DRAFTER in combination produces the highest quality yarn with excellent uniformity of counts and evenness, tensile strength, and blending . . . sliver of suitable weight for entry into the reducer of the Bradford system, the forefinisher of the Continental system, or the roving frame of the Modified Cotton System.

WARNER & SWASEY-PACIFIC CONVERTER



PAMACO #175 ASSURES

TAN in color

Many times more wear than any glazed ceramic on the market today.
Minimum production loss because down-time is substantially reduced as periodic replacement declines.
Less yarn loss because this body polishes smoothly with use.
Cost for this homogeneous body surprisingly modest.

PAMACO #200 ASSURES

REDDISH in color

Reduced breakage loss because of the inherent strength of the body.
Maximum wear because it is the hardest man-made homogeneous ceramic known today.
PAGE-MADDEN offers the PAMACO #200 body wherever intensive wear or breakage are problems.
Our prices are attractive — many savings to you.

SALES REPRESENTATIVES

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Mr. John Cheshire, Jr.
Box 93, Edgewood P.O.
Providence 5, Rhode Island

South

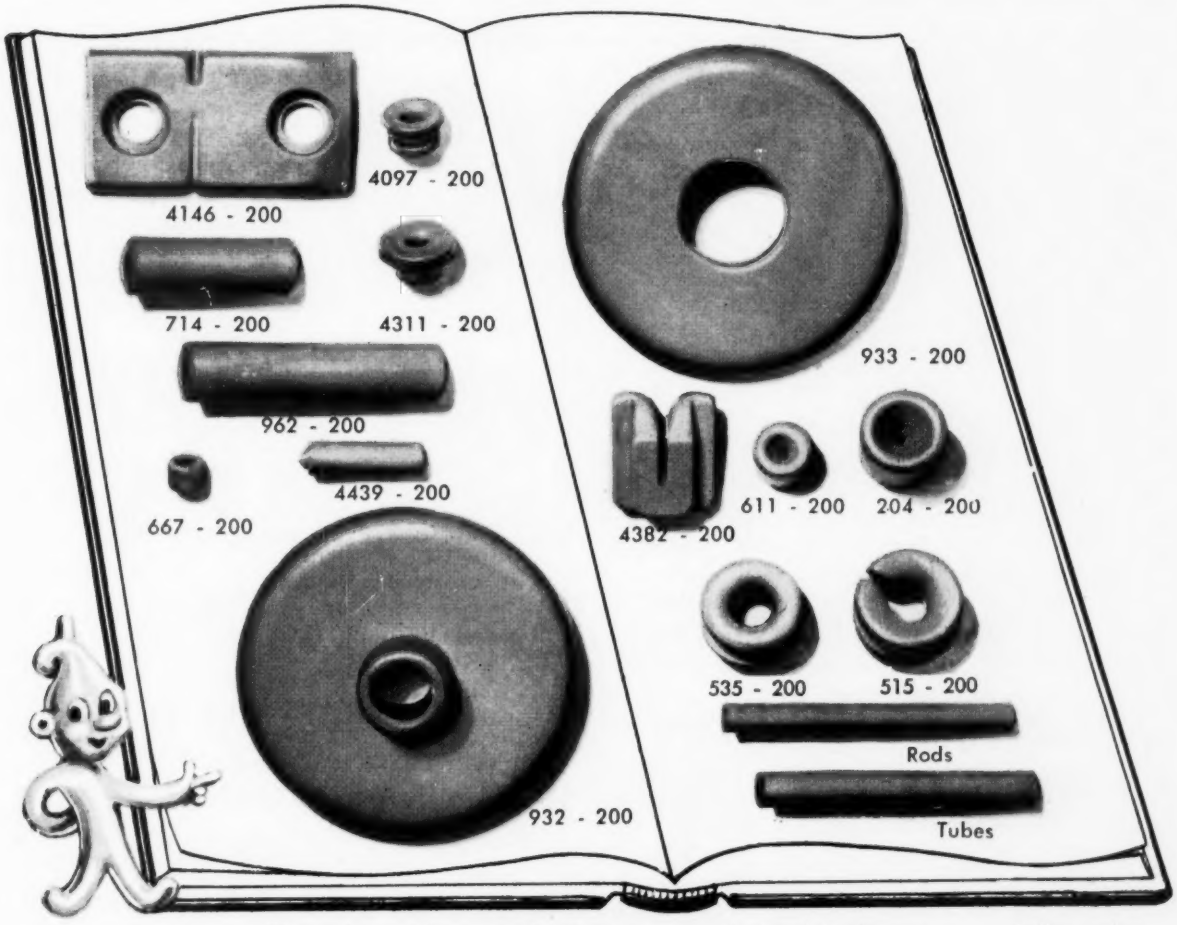
Mr. Karl H. Inderfurth
Box 6161
Charlotte 7, North Carolina

Mr. Charles Rimmer
1087 East Rock Springs Road, N.E.
Atlanta, Georgia

Pennsylvania Area

Mr. George M. Hand
Box 37
Limekiln, Pennsylvania

PAMACO 200...
WRITES A NEW PAGE IN GUIDE HISTORY



These along with many other items are manufactured in Pamaco 175 titanium body and glazed porcelain — also satin finish.

The Page-Madden Company opens its book of new long-wearing thread guides to the textile trade. Our latest edition is the "PAMACO 200" body—the longest-wearing ceramic material on the market today. Its hardness is 9+ on Mohs' scale. Our alumina body is homogenous, highly resistant to shock and abrasion and particularly desirable where drag, tension, or acid are problems. Ceramic engineering consultation is available. Your inquiry is invited.

Rollers, tubes and Rods
962 - 200
714 - 200

•

Eyelets
667 - 200
4097 - 200
4311 - 200

•

Compressors
204 - 200
611 - 200

•

All standard guides not shown available on request.

PAGE MADDEN CO. INC.
76-96 SECOND ST., MINEOLA, N. Y.

COLEMAN COMPANY, INC.

TEXTILE SUPPLIES AND EQUIPMENT

305 RUTHERFORD ROAD **P.O. BOX 1351** **GREENVILLE, SOUTH CAROLINA**

Laminated BEAM BARRELS

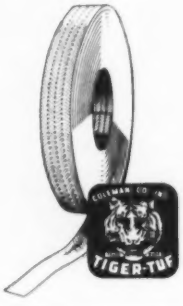
5 and 6 in. Diameters
3 and 4 Grooves

Laminated construction assures square shoulders, lasting straightness and years of satisfactory service. Features include resin bonded laminated hardwood barrels, steel shafts pinned to barrel and turned to within .005" tolerance. Available in clear or gray lacquer finish.

Tiger Tuf SPINNING TAPE

Assures top spindle speed at lower tape cost per spindle. Very low stretch factor. Double Herringbone Weave.

Immediate delivery in the following widths:
½" 9/16" ⅝" 11/16" ¾" 13/16"



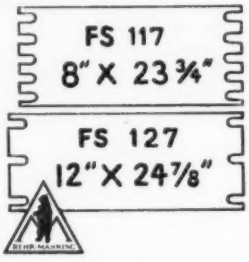
Corduroy CUTTING BLADES

Precision ground double-bevel cutting edge. Finest alloy steel, correctly tempered for long life. Supplied in matched sets from stock. Also available unground.

COATED ABRASIVES

A complete line of cut-sheet, disc and roll abrasive materials for all standard floor sanding machines.

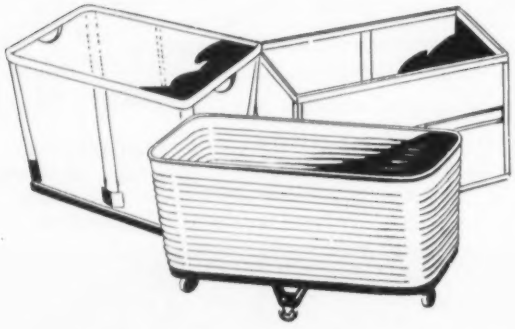
Also card grinding fillet, sanding belts, tension roll covering and other standard abrasives.



EASY-RID TEXTILE CRAYONS

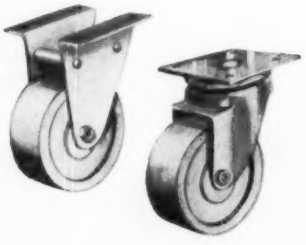
A water soluble textile marking chalk that comes out easily under scouring, bleaching or dyeing operations. Comes in 13 colors and white. Round sticks 4" long by ¾" diameter. Also in ½" square sticks for mechanical marking.

MATERIALS HANDING EQUIPMENT



The Coleman Company supplies a variety of metal and fibre trucks, canvas baskets and hampers for every mill and factory materials handling job. Battery filling, doffing and lap trucks of standard sizes and designs, or special built to your specifications.

EXCLUSIVE AGENTS
YALE
FORK LIFT TRUCKS
NORTH & SOUTH CAROLINA



Coleman also carries a complete stock of Wil-Mat, Devine and Faultless Casters in both rigid and swivel types.

WRITE FOR COLEMAN'S COMPLETE CATALOG OF MATERIALS HANDLING EQUIPMENT

announcing the new synthetic

Coleman

TRU-DRAFT COTS

A Specially Formulated Elastomer that:

- ✓ *virtually eliminates eyebrowing*
- ✓ *drafts superior yarn*
- ✓ *gives longer service between buffings*

Coleman's new TRU-DRAFT COTS are winning industry-wide praise for outstanding performance. Made from a newly developed synthetic formula, these cots combat eyebrowing so successfully that many users are drafting the highest quality yarns at the lowest cost ever!

But that is only part of the story. Let us show you in your plant the results that can be obtained.

Specify TRU-DRAFT on your next cot order. The savings and results will amaze you.

TRU-DRAFT COTS are manufactured by B. F. Goodrich Co. exclusively for

COLEMAN COMPANY, INC.

GREENVILLE, SOUTH CAROLINA

Represented by:

Bill Boger, Charlotte, N. C. Tel. 4-5563

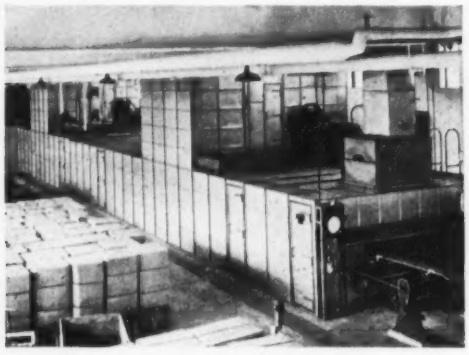
Ed White, Greensboro, N. C. Tel. 4-7218

ANDREWS and GOODRICH, Inc.

Industrial Drying and Ventilation

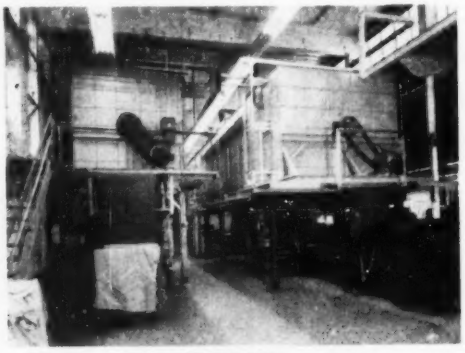
336 Adams Street **DORCHESTER, BOSTON 22, MASS.** Phone: Talbot 5-1336

Through the experience of hundreds of installations A & G have the Engineering and Manufacturing ability plus an intimate knowledge of textile finishing requirements to design a machine that will economically and correctly impart the desired characteristics to a given fabric.



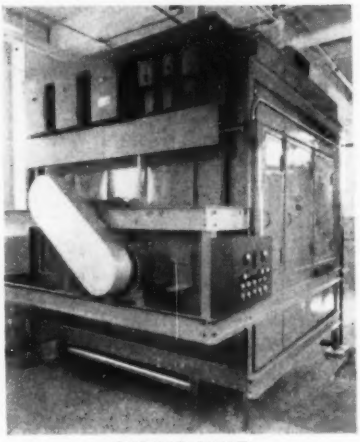
TENTER DRYER

A&G PRODUCTS

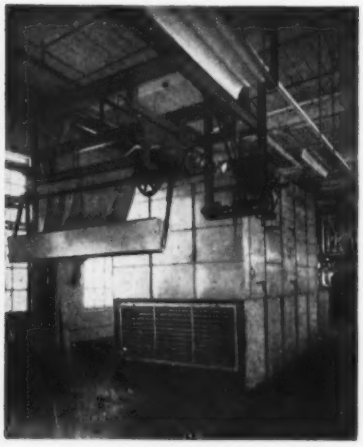


PREDRYER

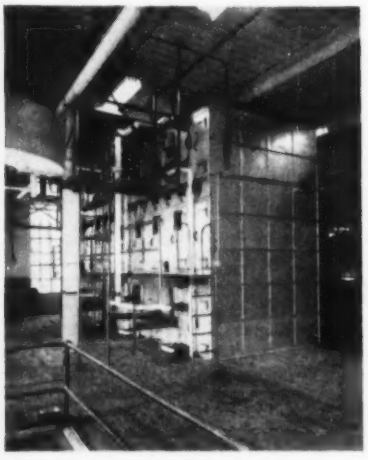
Curing Units for resins, water repellents, etc. Tenter Dryers for cottons, woolens, rayon blends and fabrics of other synthetic fibers on overfeeding pin type or clip frames. Predryers for all tenter frames, to increase capacity and avoid clipmarks. Dye Range Dryers for all types of dye ranges. Stock Dryers for wool and cotton. Warp Dryers for cotton and worsted. Print Machine Dryers for all types of goods, either all air or auxiliary air with cans. Dryers for carpets, skeins and packages, and miscellaneous textile products. All may be heated by steam, gas, oil, electricity or radio-frequency. Conditioning Machines to give full regain in woolen and worsted goods. Ventilation for Textile Mills.



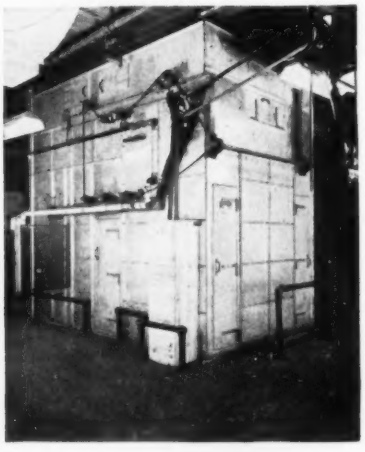
CURING UNIT



CLOTH CONDITIONER



WARP DRYER

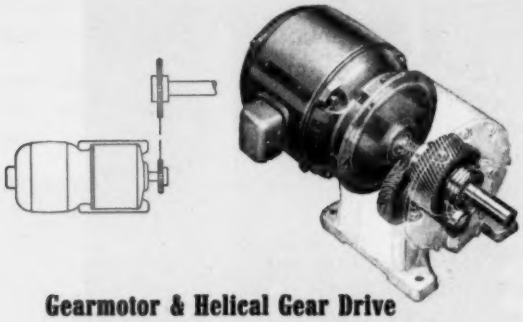


PRINT MACHINE DRYER

LINK-BELT makes even your most complex speed reduction jobs *simple*

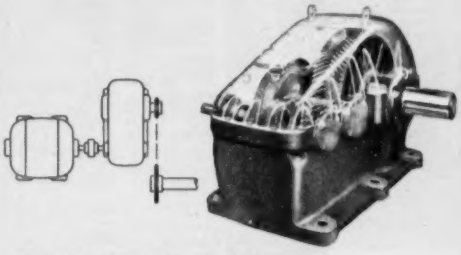
Worm Gear Drive

WORM GEAR and P.I.V. variable speed drives are shown direct-coupled. Link-Belt worm gear drives are available in 3.1:1 to 8000:1 reduction ratios — 1400 to 123,000 in. lbs. torque — 0.22 to 564 output shaft rpm. Ask for Book 2324A.



Gearmotor & Helical Gear Drive

GEARMOTOR is shown with roller chain drive. Link-Belt Helical Gear Drives, Gearmotors and Motogears are available in 6.2:1 to 292:1 reduction ratios — 1 to 30 hp — 6 to 280 output shaft rpm. Ask for Books 2247 and 2451.



Herringbone Gear Drive

HERRINGBONE GEAR DRIVE is shown connected by flexible coupling to motor and with roller chain takeoff. Link-Belt Herringbone Gear Drives are available in 2.84:1 to 326:1 ratios — 0.4 to 2480 hp — 2.2 to 623 output shaft rpm. Ask for Book 2519.

Get the proper drive combination that best meets your overall requirements from a broad line

ONLY Link-Belt can offer you such a broad selection of helical, herringbone and worm gear drives . . . plus the pre-engineered correlation of all its other power transmission equipment. This exclusive combination not only simplifies even the most complex problem — it actually cuts your costs. Here's how:

(1) You save on installation. Dimensions of all components — chains, sprockets, couplings, bearings — are correlated with the reducer's. There's no alignment problem . . . no need to exchange drawings with other suppliers.

(2) You save on operating costs. Power consumption is lower because overall efficiency is assured. And maintenance costs go down when you rely on quality-built Link-Belt equipment.

Let a Link-Belt representative help you figure the best combination for your speed reduction requirements. You'll find it pays to make the nearby Link-Belt sales office or distributor your power transmission headquarters.

LINK-BELT

ENCLOSED GEAR DRIVES

13.1.8

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

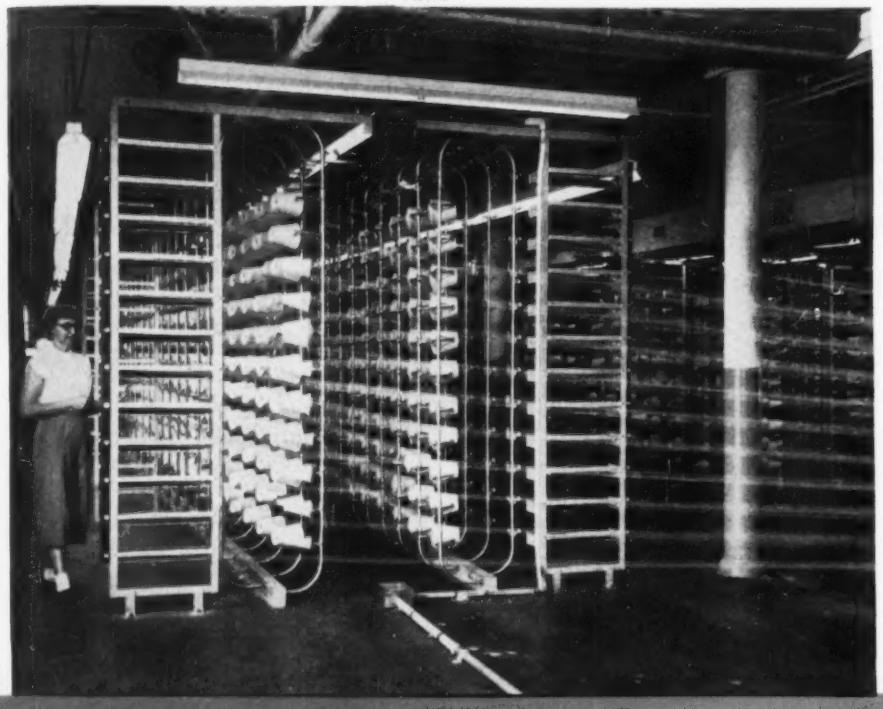
McBRIDE MAGAZINE CREELS

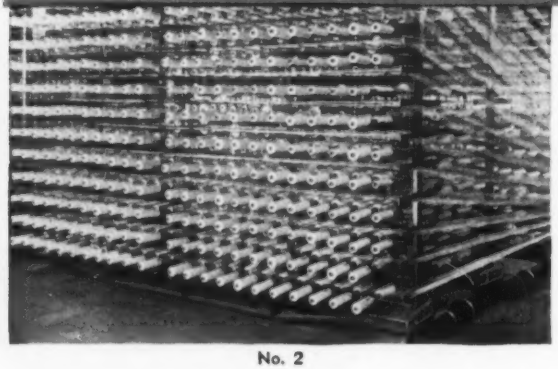
McBride magazine creels, equipped with McBride Universal Cone Holder (photo #5), double post disc type tension unit (photo #6), and the new McBride electro magnetic sealed mercury switch stop motion (photo #4) can be set up with yarn coming down either inside or outside, or tandem assembly if floor space is limited. Monorail construction assures easy cleaning, empty or fully loaded.

The McBride Sealed Mercury Switch Stop Motion is super sensitive model for extremely light yarns and standard model for heavier yarns gives positive action regardless of lint or humidity conditions.

AVAILABLE AS SEPARATE UNITS. The McBride Super Sensitive Stop Motion, McBride Universal Cone Holders and other McBride creel parts are available separately for use on existing creels.

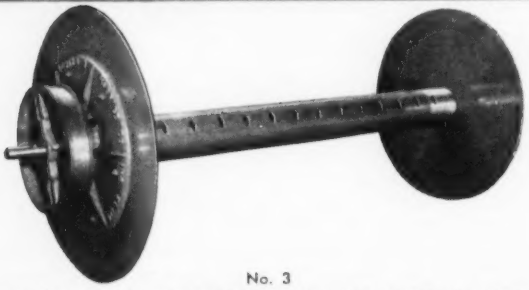
No. 1





No. 2

OTHER McBRIDE CREELS for weaving, warping and winding are available in a wide variety of types and sizes designed to meet customers' individual needs. Consult McBride for your every creel need.



No. 3

BEAMS OF ALL TYPES FOR WARPING AND WEAVING

All metal beams for broadloom weaving. Plush type loom beams with positive or friction let off and adjustable heads made to individual customer specifications. Carpet beams designed for heavy duty yarns are all-metal, all-welded construction. Rolls to meet individual needs including rubber covered and stainless steel clad rolls.

PROVIDE EXTREME FLEXIBILITY

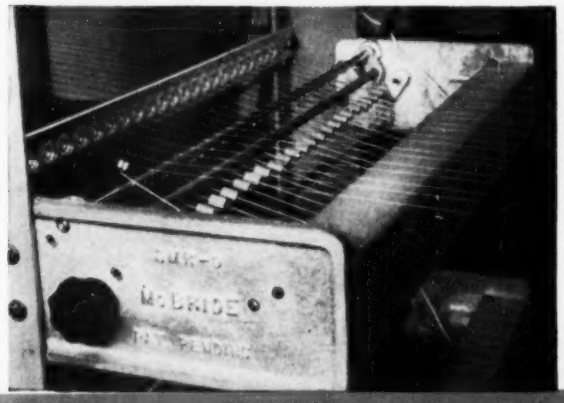
FAST LOW COST OPERATION

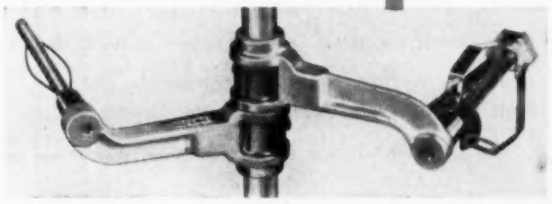
THE McBRIDE UNIVERSAL CONE HOLDERS give you these basic advantages: Provide instant change from cones to tubes, accommodate most types and sizes of packages, will not snag moving yarn, mounted on swinging arms for fast package change, cone holder revolves to facilitate tying of transfer tails. No set screws to adjust. →

McBRIDE SUPER SENSITIVE SEALED MERCURY SWITCH STOP MOTION shown below is counter balanced with sliding weights for adjustment to type and weight of yarn used from extremely fine yarns such as 12 and 15 denier nylon (and 100's up in cotton) to heavy wool or synthetic yarns.

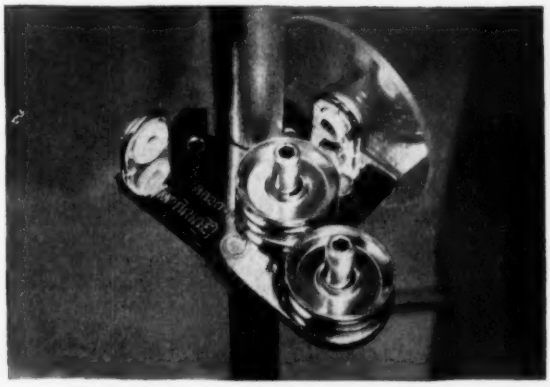
ANOTHER SERVICE OFFERED by the Edward J. McBride Company is the spray metalizing of worn journals and beamings.

No. 4





No. 5



No. 6

McBride Double Post Disc Type Tension Unit

ENGINEERING SERVICE PART OF EVERY McBRIDE INSTALLATION. Regardless of your purchase from the Edward J. McBride Company, complete engineering to your needs is part of the project. You are assured of a unit that will run efficiently and effectively in your plant whenever you purchase from the Edward J. McBride Company.

No. 7

McBRIDE CARPET MENDING TABLES provide automatic handling of heavy carpets during inspection and mending. Both sides can be examined without the need for the operator to lift the heavy carpet roll.

McBRIDE

EDWARD J. McBRIDE COMPANY
Cottman Avenue & Wissinoming Street
Department TWC
Philadelphia 35, Penna.

RODNEY HUNT MACHINE CO. 72 Mill Street, Orange, Mass., U.S.A.

To fill your wet processing machinery needs write or telephone the following sales offices:

Southern Region (S.C., Ga., Ala., N.C., Ky., Tenn., Southern Virginia)
Rodney Hunt Machine Co. Wilder Bldg., Room 909
237 South Tryon Street Charlotte 2, N. C. Phone: Charlotte 6-2163

Mid-Atlantic Region (Northern Virginia, W.Va., Pa., N.J., N.Y.City, and Long Island
Rodney Hunt Machine Co. 5 West Park Avenue Merchantville 8, N. J.
Phone: Merchantville (Philadelphia) 8-4357

New England and New York Region (New England States, and New York State except as above)
Rodney Hunt Machine Co. Orange, Mass. Phone: Orange 9

COTTONS

Bleaching Ranges (duPont or Becco)
Bleaching **Rangettes**
Standard Open Width Washers
Tensitrol Open Width Washers
Tensitrol Rope Washers
Heavy Duty Padders
Pad Steam Dye Ranges
Extractors (Water Mangles)
(Starch Mangles)
Scutchers
Wring-Master Rope Squeezers
J-Boxes
Saturators (Open Width)
(Rope)
Dry Cans
Standfast Molten Metal Ranges
Tensitrol Steamers
Agers

RAYONS

Tensitrol Open Width Washers
True-Shade Dye Becks
Scutchers
Padders
Pad Steam Dye Ranges
Standfast Molten Metal Ranges
Slack Loop Washers

KNIT GOODS

True-Shade Dye Kettles and Dye Becks
Wring-Master Squeeze Rolls
Bleaching Ranges
Bleaching **Rangettes**
Washers
Padders
Quetches

SPECIAL MACHINERY

Rug and Carpet Dyeing Machines
True-Shade Scouring and Dyeing Machines for Nylon and Nettings
Special Stainless Steel Tanks and Machinery
Wring-Master Squeeze Rolls for laminating and other uses
Coating Machines
Acetylization Ranges
Latex Backing Machines

AUXILIARIES

Special Reels
Folders
Scutchers
Poteyes
Roller Poteye Guides
Tanks and Kettles
Draw Reels
Rolls, all types, **Shaf-Tite** construction
Batchers
Wring-Master Squeeze Roll Units
Compensators (rack or swing types)
Entering Equipment
Tension Bars
Standfast Lab. Machines
Whirlwind Sample Dryer
True-Shade Sample Dye Kettles

WOOLENS and WORSTEDS

Air Express Fulling Mills
Yankee Clipper Washers
Carbonizers
Scutchers
True-Shade Dyeing Machines
Crabbing Machines
Endless Felt Washers and Fulling Mills
Folders
Padders
True-Shade Combination Washing and Dyeing Kettles
R-H Extractors

RODNEY HUNT ENGINEERED STAINLESS STEEL FABRICATION

When small vessels or complex equipment require precision fabricating standards . . . call on Rodney Hunt. Our long experience in manufacturing textile machinery assures you of stainless steel fabricating know-how intelligently applied to any processing machinery requirement. Large material stock and many standardized forms mean economical pricing and firm delivery. Send for Bulletin 153.

Tensitrol, Wring-Master, Tru-Shade, Shaf-tite, Whirlwind, Yankee Clipper, Air Express, and Slack Loop are registered trademarks of Rodney Hunt Machine Co. Rangette is a tradename of Rodney Hunt Machine Co.

Fig. 1 TENSITROL ROPE WASHER multiplies washing efficiency because (1) cloth is always relaxed thus dirt or chemicals release more quickly (2) immersions multiplied (3) more effective counter-flow. Major savings in water and steam consumption, power, and maintenance. Speeds up to 300 yards per minute.

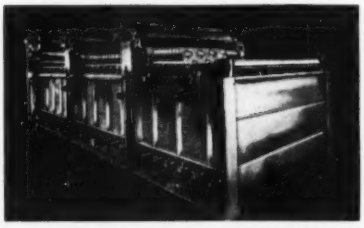


Fig. 2 TENSITROL OPEN WIDTH WASHER for processing sheer rayons, woolen blends, cottons and synthetics. Speeds up to 120 yards per minute. Handling with reduced tension realizes new standards of washing efficiency and fabric protection.

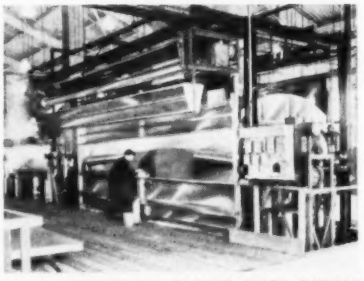


Fig. 3—TRU-SHADE CARPET PIECE DYEING MACHINES are dyeing carpet fabrics—including COTTON pile rugs—full width in the piece, and meeting high production requirements.

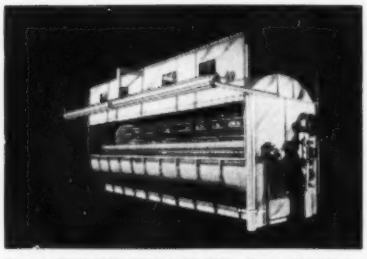
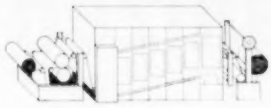
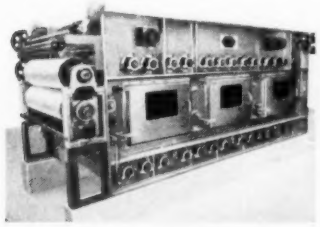


Fig. 4 TRU-SHADE DYE BECK. Scientifically designed tub shape for maximum load with minimum liquor content. Minimum fabric tension. Active circulation and high temperature for even dyeing. Any size.

RODNEY HUNT





Figs. 5 and 6: RODNEY HUNT PAD-STEAM CONTINUOUS DYEING RANGE. The Tensitrol Steamer combines with Rodney Hunt padders and the Tensitrol Washer for top efficiency in the continuous dyeing of cottons, acetate and rayon mixtures and blends with vats, indigosols, sulphurs and napthols. Exceptionally sensitive variable-speed drive eliminates wrinkles, creases and tie-ups in dyeing a wide variety of goods. The top, adjustable throat, and heating coils are designed and guarded to positively prevent drip or blowing of steam on goods. All-stainless-steel construction assures freedom from corrosion and leaks.

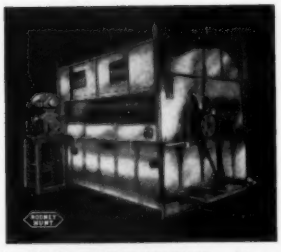


Fig. 7 SLACK LOOP WASHER with any required compartmentation for variety of rope processes. Heavy duty squeeze rolls and additional rope squeezer where required.

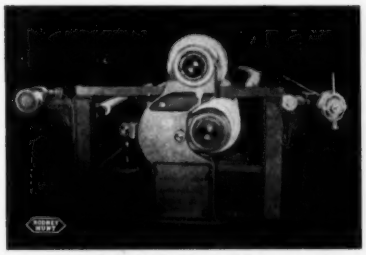


Fig. 8 WRING-MASTER PADDER with heavy duty 15 ton pressure 50" face to 120" face. For dye padding and finish applications. Rolls of 18" diameter, stainless steel and rubber or two rubber rolls. Also made in 3-roll style.

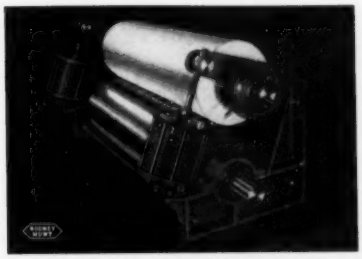
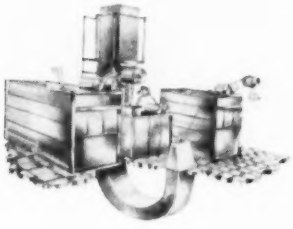


Fig. 9 WRING-MASTER SQUEEZERS in three pressure ranges from 2-11 tons. May be mounted on almost any existing tub or tank. Also furnished on structural stands as quetch or medium pressure padder.



Figs. 10 and 11: RODNEY HUNT CONTINUOUS PEROXIDE BLEACHING RANGETTES are designed for moderate production of 50 to 100 yards per minute. Simple low-cost drive. Use minimum of water, steam and chemicals. Photo (left) shows extremely compact arrangement of Du Pont type Rangette. Saturator over J-box reduces needed area to 10 x 14 feet. Drawing at right shows straight-line arrangement of Becco type Rangette. Wide range of capacities and arrangements is possible.

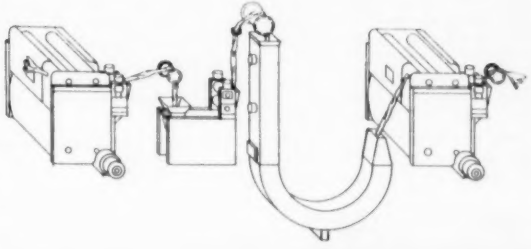


Fig. 12 TANKS in types, sizes, shapes and with fittings to suit your needs in storage, processing, and chemical feed systems.

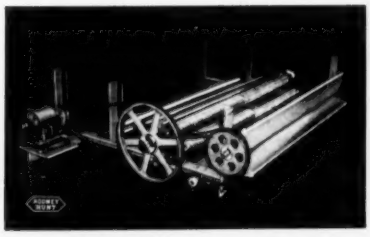


Fig. 13 SCUTCHERS engineered for simplicity. Two models—single roll to accept motive power and double roll to provide it—for from 17" huck towellings to 108" bed spreads.

Fig. 14 SHAF-TITE ROLLS AND REELS of all types. Rodney Hunt's Industrial Roll Division manufactures metal, rubber and wood rolls offering the extra advantages of patented constructions for long service.

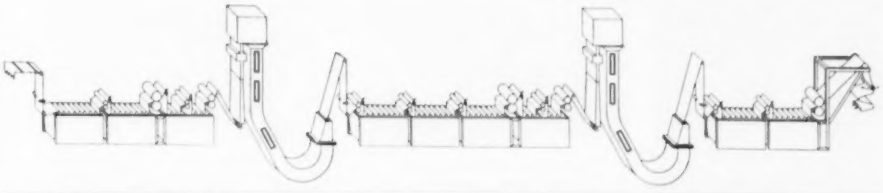


Fig. 15 CONTINUOUS BLEACHING RANGE: The famous Tensitrol* Rope Washer for low cost efficient washing at high speeds combined with the Rodney Hunt J-Box with special patented features. Becco or duPont (illustrated) systems, open width or rope.

The machinery and equipment described on these two pages incorporate features and designs which are covered by Patents Allowed and Patents Pending in United States and foreign countries.

* Reg. U.S. Pat. Off.

Diamond Vulcanized Fibre

MOVE MATERIALS

FAST – SAFE – ECONOMICALLY

with

SPARTAN TRUCKS

Our sales engineers report that once you put a Diamond Fibre SPARTAN TRUCK on your floor, repeat orders keep coming. Why? Because SPARTANS make money for you . . . moving materials safer, easier, faster than do trucks of cheaper construction.

SPARTANS last and last and last! The expert C-D-F workmanship is always dependable and outstanding. Sizes, number of center bands, types of casters, colors may be changed to fit the needs of your mill. That's why the C-D-F sales engineer visits your mill and checks the width of the alleys, the number and size of the bobbins and other limiting factors.

Mill economy always starts with quality. Standardize on SPARTAN trucks . . . built only by C-D-F to make the textile man's working day run smoothly!

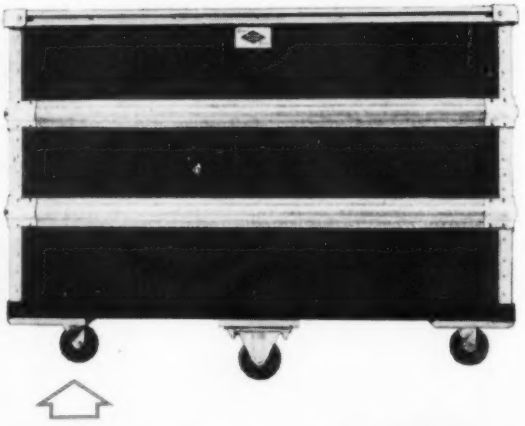
ROUNDED METAL CORNERS help the SPARTAN bounce and slide past machinery. Eight corner rivets guarantee super strength.

UNIQUE TOP RIM . . . the SPARTAN has no overhang inside, nothing to catch elbows or materials. Rim is one piece, *all metal* (no wood inside to break), channeled for extra strength. Rust resistant finished.

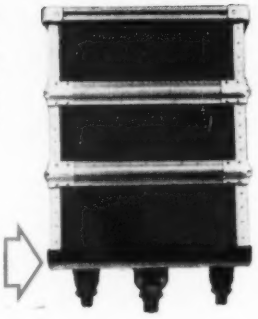
TOUGH C-D-F FIBRE BODY . . . genuine top grade Diamond Vulcanized Fibre is used throughout. This light weight material is rugged, scuff proof, lasts for years without maintenance. A SPARTAN is easy to clean; oil and grease may be wiped out . . . the entire truck stays slick and smooth. Fibre is .090" to .110" thick and is beautifully finished inside and out with water resistant varnish. Colors are red, gray, olive green. (Color is part of the Fibre itself . . . no paint to scar, scuff or chip!)

CURVED CENTER BAND hugs the Diamond Fibre sides and has two strong rows of rivets. Extra wide for good frame support, yet the formed shape pushes a SPARTAN away from spinning frame when ring rail lowers.

THE BEST IN BOTTOMS . . . tongue and grooved, seasoned oak bottom, either solid or slatted (specify opening desired—$\frac{1}{4}$" standard). Oak battens. Painted or varnished.



CHOICE OF CASTERS . . .
our standard caster is deluxe, a rigid 4" diameter metal wheel caster—the choice of the majority of mill operators. Other types of casters (rubber composition; bakelite; iron; thread guard; plain; ball or roller bearing; swivel) may be supplied.



KICK BAND . . .
is welded angle iron frame that protects sides of genuine hardwood bottom. Center batten is thicker than front or rear ones. A SPARTAN is light on its wheels . . . turns and swivels smoothly!

DIAMOND HOLLOW WARE FIBRE

ROVING CANS

Nothing can be stronger, tougher, yet smoother than a Diamond Fibre seamless Roving Can! They stand up, stand out for years of reliable service. Look for the famous blue and yellow Diamond Fibre emblem . . . your guarantee of smooth, seamless uniformity . . . from quantities of one sample can to a full carload or more.

BODY: Diamond Vulcanized Fibre, finished inside and out with a moisture resistant synthetic enamel. Feel the inside of the can . . . seamless and smooth from top to bottom!

BOTTOMS: Galvanized metal bottoms secured by rust resistant ring which permanently grips strong kicking band of tough, black fibre.

SIZES: 10", 12", 14" diameters, 36" high are standard and stocked at C-D-F Spartanburg, S. C. Because C-D-F is one of the leading fibre manufacturers in the world, special sizes or designs can be produced economically.

THREE TOP RIM STYLES

METAL TOP rim of 16-gauge cold rolled steel, rust resistant plated, smooth and snugly fitted around the can. Nothing hampers flow of cotton into and out of can. Bales can be furnished to increase capacity.

ROLLED FIBRE TOP rim eliminates static charge when running synthetics. Fibre is turned over on itself two and one half times, giving high rim strength plus positive smoothness.

TURNED FIBRE TOP rim. Heavy wire ring reinforces turned fibre top. Strong and popular type of construction.

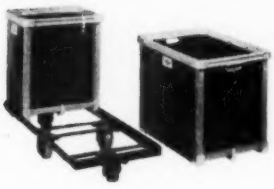
BOXES

C-D-F MILL BOXES are made from a heavy grade of genuine Diamond Vulcanized Fibre and have a rust-resistant metal top rim similar to that used in SPARTAN trucks. Cut-in hand holes are steel reinforced and corner angles give box rigidity and long life. Runners are heavy maple, with or without metal end clamps.

C-D-F TOTE BOXES are made from a lighter grade of fibre and have metal, metal-covered wood, or wood top rims. They may be furnished with metal corner angles or be simply riveted.

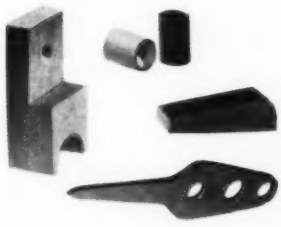
BARRELS

Here's another all-quality C-D-F product. This C-D-F barrel is lightweight, easy to handle, easy to keep clean; oil and grease can be speedily wiped off. Like other products made from Diamond Vulcanized Fibre, the barrel is exceptionally strong and long-lasting. Top rim is spun metal; handles are metal-reinforced. Kick bands can be furnished in fibre or metal. Metal or wood bottoms can be furnished. Available with or without casters.



DOFFING TRUCKS

Two durable Diamond Fibre boxes combined with a strong, easy-running truck. Notice the way those boxes are constructed. No skimping on rivets. Smooth surfaces inside and out. Everything has been designed to speed the job . . . keep machines humming! The C-D-F sales engineer can help you choose the right size. He checks the width of your post alleys, cross alleys, height of ring rail, and the number of spindles to be doffed.



LOOM PARTS

Carried in stock at Spartanburg: CLOTH ROLL BLOCKS of Diamond Vulcanized Fibre are non-splitting, offer long life, reduce wear on metal cloth roll bar. All size of BINDER BUSHINGS are available. PARALLEL PLUGS of molded Celoron need no lubrication, last for years, will not delaminate, splinter, fracture, or soften. KNIFE GUIDES can be supplied in Diamond Fibre or Celoron, are absolutely strong and straight. Also, POT-EYES of molded paper-based Celoron. Low-cost, resists water, never corrodes, withstands high heat and moisture.

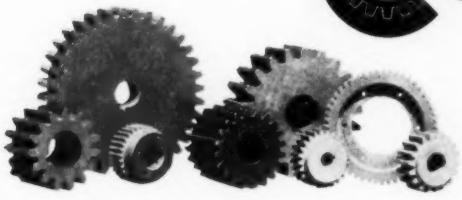
CDF

MAKES

Barrels
Bearings—
cloth roll
jig
Boards—
examining
Bobbins
Blades—
separator
Boxes—
battery filling
bobbin
conditioning
doff
mill
quill
spooler
tote
Buckets—
spinning
Bushings—
binder
Cams
Cans—
roving
waste
Couplings
Gears
auxiliary
card
coiler head
fitting
motor pinion
quill
picker
spinner
spooler
Guides—knife
Picker—
stick parts
Pins—binder
Pirns
Plates—lay
Plugs—
parallel
Pot-eyes
Pulleys
Receptacles
Rolls—lap
Rollers
Separators
Sheets—
bin lining
Shuttle parts
Tabs—binder
Track—
tenter frame
Trucks—
cloth
conditioning
doff
filling
quill
spinning
spooler
twisting
waste
winding
Tubes—core
sizing
Tubing—Spiral
Washers

STOCK & SERVICE FROM

GOLDEN SILENT Celoron®



Here is an amazing C-D-F plastic that works miracles in textile machinery. It is made from cotton . . . tough canvas sheets that are treated with phenolic resin, then laminated and cured under heat and pressure. Results: CELORON, a golden, strong material that can be easily cut into gears. Celoron gears require no lubrication, have high impact strength, excellent resistance to heat, oil, and water. Because they are non-metallic they eliminate noise and reduce wear on mating metallic gears.

Your C-D-F sales engineer knows many of the proven, successful applications for CELORON. Clanking, gnashing machinery in your mill may indicate needless wear and wasted effort. That's why we say . . . IF IT'S GEARING YOU'RE HEARING . . . try CELORON!

Standard sheet sizes: 39" x 46", 1/32" to 6" thick.

Call Spartanburg 3-6397 for Celoron gear blanks! Service comes first with C-D-F. We guarantee to get a band-sawed blank on the way to your gear cutter f-a-s-t.

SPARTANBURG, SOUTH CAROLINA

Better Service for the South: That's the motto of the new Continental-Diamond Fibre plant and warehouse at 834 Hayne Street, Spartanburg, S. C. Call Spartanburg 3-6397 for SPARTAN trucks, Diamond Fibre roving cans, boxes, loom parts, Celoron gear blanks, service from your C-D-F sales engineer.

C-D-F has five plants, sales offices in 28 principal cities and Canada. Write for office nearest you, and Receptacles Catalog R-52 showing complete line.

CDF

Continental-Diamond Fibre Company

NEWARK, DELAWARE, U.S.A.

Winsor & Jerauld

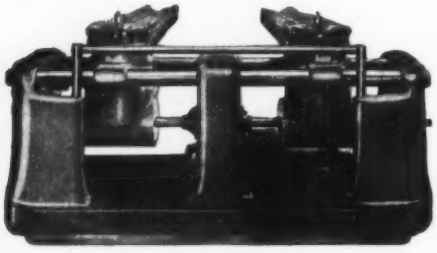
MANUFACTURING COMPANY, Inc.

MAIN PLANT
1268 EDDY STREET
PROVIDENCE, R. I.

SOUTHERN DIVISION
518 ATANDO AVENUE
CHARLOTTE, N. C.

EXPERTS IN CLOTH FINISHING MACHINERY.

HIGH SPEED AND MERCERIZING TENTERS



Designed and built to handle requirements and speeds anticipated in the years to come.

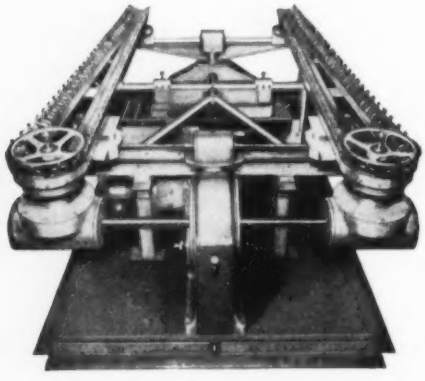
Driving end is rigidly built on welded steel bed plate.

Main drive is located centrally between the main gear heads and is featured by a fully enclosed silent chain drive.

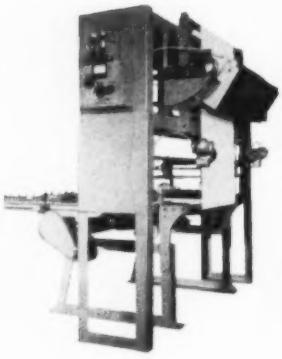
No oil spatter.

Adequate provision for expansion built into all tenters.

SWING (JIGGING) TENTERS



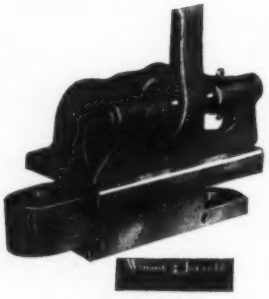
Entirely new designed and engineered (swing) machines for quality finishing. Extreme smoothness of motion. Oscillations, length of swing, power opening, and main drive are all independent of each other. Even tension throughout swing.



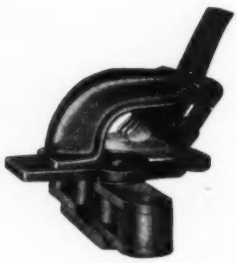
ELECTRONIC AND MECHANICAL WEFT STRAIGHTENERS

Pictured is the newly designed Winsor & Jerauld semi - automatic weft straightener, a precision piece of equipment which corrects the skew in the weft of cloth being processed through finishing, or prior to dyeing or printing.

WINSOR & JERAULD TENTER CLIPS



No. 7 Regular



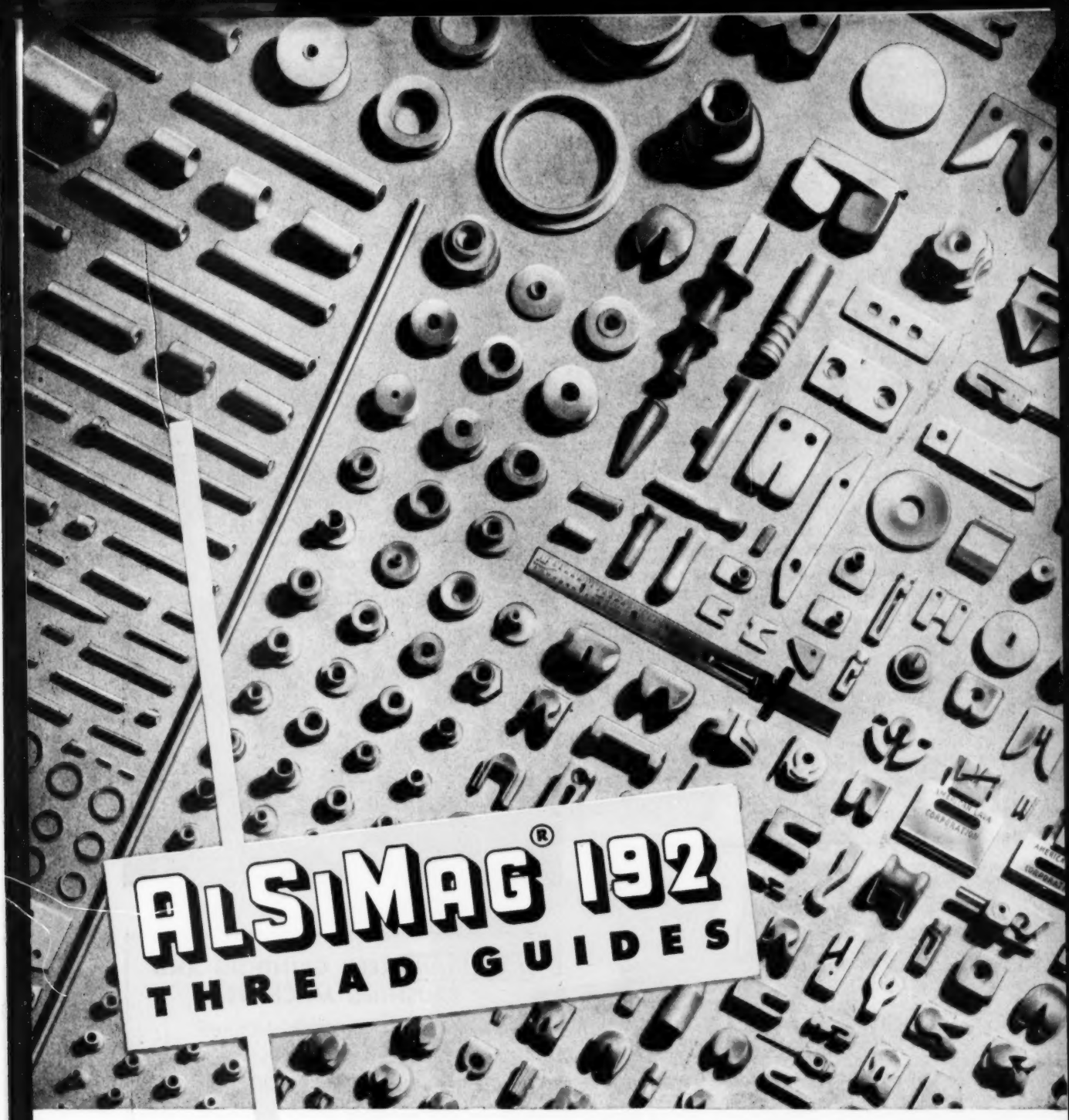
No. 12 Roller

Chains for every requirement in tentering and mercerizing, precision built of finest materials. Horizontal or over and under design. Conventional or high speed roller chain. Automatic self feeding clip or pin chain. Manufactured for all types of tenter rails.

A partial listing of Winsor & Jerauld equipment includes the following:

- High Speed Tenters.
- Jigging Tenters.
- Mercerizing Frames.
- Tenter Clips adaptable to all model Tenters.
- High Speed Tenter Clips, Roller Chain Style.
- Mercerizing Clips.
- 2-Roll Pads.
- 3-Roll Pads.
- Back-Fill Machines.
- Swivel Letoffs.
- Tension Controlled Letoffs.
- Friction Controlled Letoffs.
- Automatic Cutoff Winders.
- Tension Controlled Batchers.
- Single Drum Winders.
- Cloth electronically controlled Weft Straightener.
- Cloth Push Button controlled Weft Straightener.
- Electrically controlled guiders.
- Scutchers.
- Folders.
- Cloth Bow Correctors (pneumatic or mechanically operated).
- Tenter Overfeeding Equipment.
- Radial Gate Type Compensating Equipment.
- Rack & Pinion Compensator.
- Counting, Measuring & Lubrication Devices for Tenters.
- Complete Cotton and Rayon Finishing Ranges are supplied by Winsor & Jerauld.

Replacement parts for all Winsor & Jerauld machinery and other makes since 1900 are available in a large stock of such parts maintained.



• *Made to your design* • *Satin or highly polished finish*

Available also in AlSiMag 193 (electrically conductive) • *Long Wearing—LOWEST IN COST IN THE LONG RUN!*

52ND YEAR OF CERAMIC LEADERSHIP

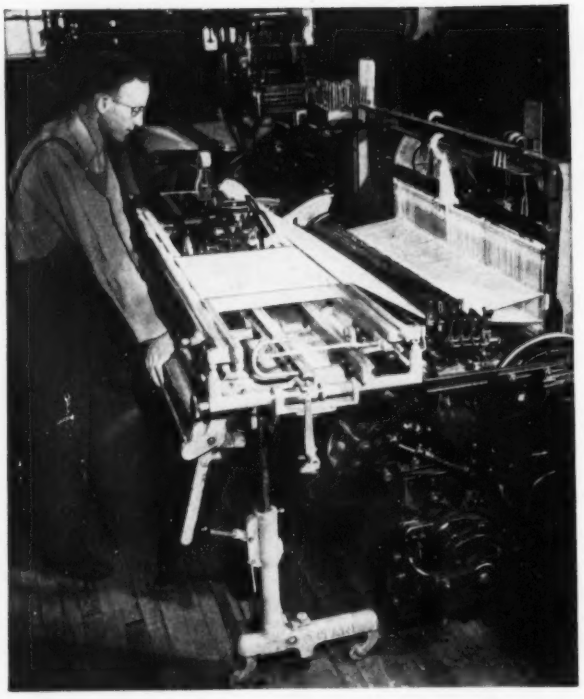
AMERICAN LAVA CORPORATION

A SUBSIDIARY OF MINNESOTA MINING AND MANUFACTURING COMPANY

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411. CONTINENTAL EUROPEAN REPRESENTATIVE: P. C. Huguenin Luzern, Gerbergasse 6, Luzern, Switzerland.

The fastest and most economical Warp Tyer in America...

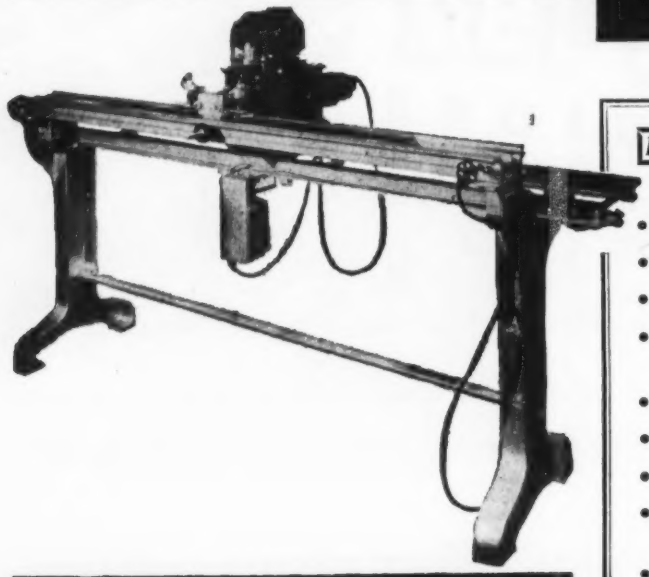


WARP TYING MACHINE

Southern cotton mill reports tying **103,984 ends in 8 hours.**

Another mill reports tying over 80,000 ends in 8 hours of heavy sley cotton and spun rayon.

- All straight, perfect weaving warps.
- No double ends.
- No reed disturbance or harness setting.
- Ties more ends per minute at lower costs.
- Ties warps with or without leases and unleased to leased warps or vice versa.
- Ties, nylon, rayon, wool, worsted, cotton, silk, glass or combination yarns.
- Is simply designed for ease of operation.
- Ties portable and/or stationary.



EXCELSIOR REED GRINDING AND BRUSHING MACHINE

- Accommodates reeds up to 8 feet in length.
- Operates automatically — can be left unattended.
- No special tools or parts required.
- Mechanically grinds and brushes reeds in one operation.
- Grinds or brushes separately if desired.
- Eliminates slow and costly manual cleaning.
- Puts used reeds in perfect condition again.
- Prevents reeds from being unduly discarded — can be used many times over.
- Will pay for itself in comparatively short time by minimizing purchases of new reeds, and in better weaving.

EDDA INTERNATIONAL CORP.

468 FOURTH AVE., NEW YORK 16, N. Y. CALHOUN TOWERS, GREENVILLE, S. C.

U. S. General Sales Agents

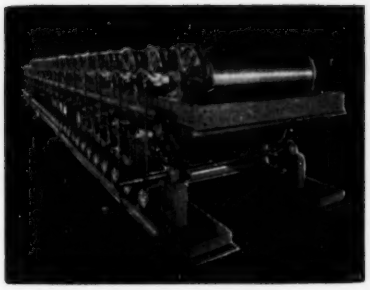
CARROLL

Designers And Manufacturers Of Cloth Finishing Equipment

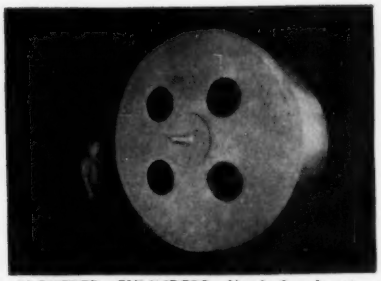
Drying Machines
Cooling Machines
Back Dryers
Slasher Cylinders
Jacketed Cylinders
Cooling Drums
Continuous Washers
Webbing Calenders
Webbing Dye Pads
Squeeze Roll Extractors
Compensators
Dye Tanks
Padder Rolls
Mixing Kettles
Size Kettles
Lab Equipment

These illustrated are only a few of the full line manufactured to specifications for a wide range of work. Maintenance and repair service also available.

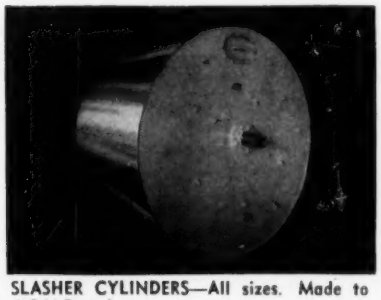
SERVING THE TEXTILE INDUSTRY SINCE 1913 . . .



HORIZONTAL CYLINDER DRYER—Compact design, reduces maintenance and repair.

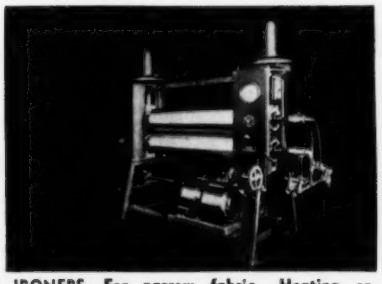


JACKETED CYLINDERS—Used for heating or cooling. All sizes available.

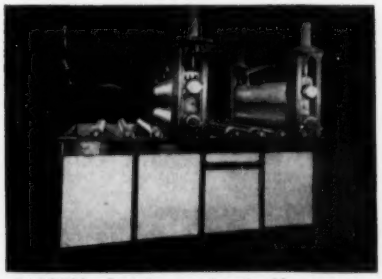


SLASHER CYLINDERS—All sizes. Made to A.S.M.E. codes.

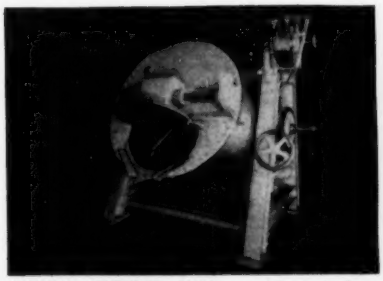
OPEN END COOLING CYLINDERS—For Embossers, Tenter Frames, etc. 3" water level at bottom of cylinder.



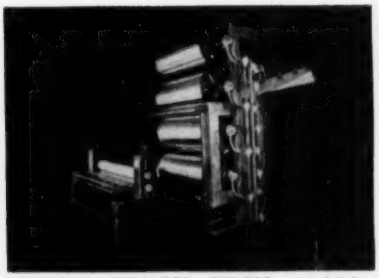
IRONERS—For narrow fabric. Heating or cooling.



PADDERS—Stainless steel and rubber squeeze rolls. Variable pressure controls.



MIXING KETTLES—With or without jacket for steam heating. 10 to 300 gal.



VERTICAL CYLINDER DRYERS—Multiple units available for webbing, yarn or fabric.

Many units pictured can be made to adopt existing framework in conjunction with other operations. "Package units" complete with Drive, etc. are available on most machines.

J. E. CARROLL & CO.

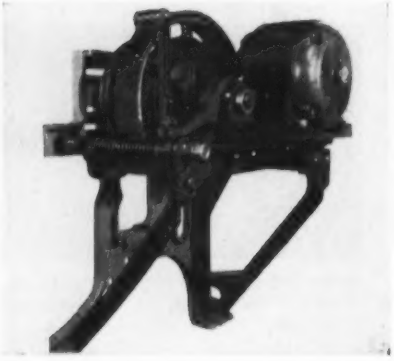
OFFICE AND PLANT LOCATED AT 100-114 CAMBRIDGE STREET
LOWELL, MASSACHUSETTS

BAHAN TEXTILE MACHINERY CO., Inc.

DESIGNERS AND MANUFACTURERS OF RELIABLE TEXTILE MACHINERY FOR OVER 30 YEARS

Greenville, South Carolina

These are a few of the Bahan Loom Assemblies which are available from stock and come complete with all parts . . . ready to install.

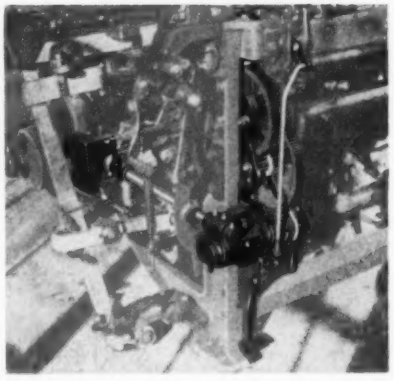


BAHAN MOTOR DRIVES

This new design eliminates completely the common production-robbing problem of grease leaking through to the cork clutch or clutch friction disc. Bahan's New Model D 1 Drive never slips . . . never loses power efficiency. Compared to other loom drives, it reduces the usual adjustments required by 80%.

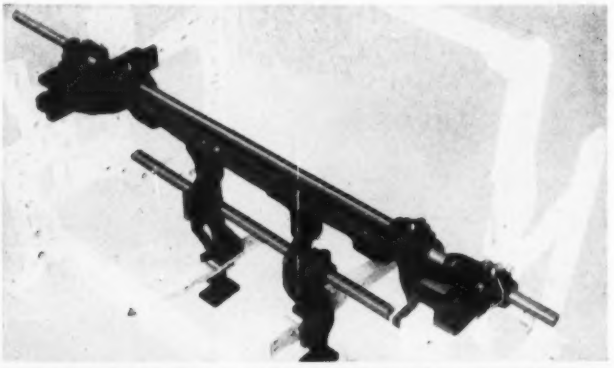
BTM WORM TAKE-UP

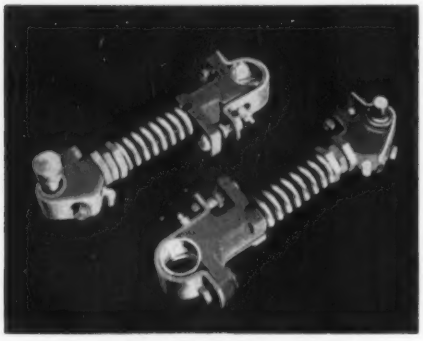
Replaces ratchet type take-ups for E, K and modified D model looms. Dependable steel driving gear on cam shaft. Individual take-up gears also supplied for all other loom models.



BAHAN LOOM TOP GIRTS

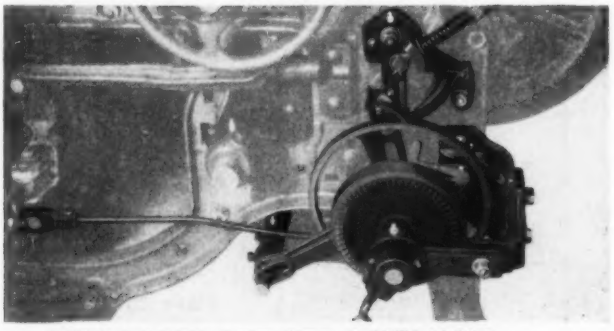
Designed to provide a smooth, high speed operation when installed on Model E looms. End sections contain bronze, grease-lubricated bearings for inside and outside of crank throw. One piece Center section with rectangular key and keyway for correct bearing alignment. Features upright supports from floor to center section. Each assembly factory aligned and fitted with new crank shaft.





BTM SPRING-TYPE CRANK ARMS

Made of tempered steel and iron and designed for rugged flexibility, BTM Spring-Type Crank Arms are reinforced at all points of strain. Shipped complete with grease fittings and hardened steel crank pin. Engineered for long, trouble-free service and smoother loom operation at any speed.



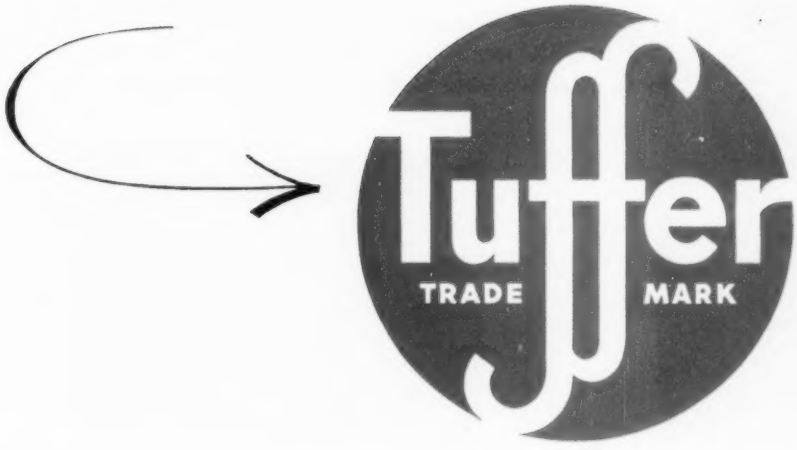
BTM ROPER LET OFF ASSEMBLY

Bahan-Built Roper Let-offs are equipped with new, non-locking gears that have machine-cut teeth. These gears never lock or "hang-up" in operation. Shipped complete with all parts for easy installation. Individual parts may be ordered separately if desired.

Bahan keeps a complete stock of Repair Parts, Motor Pinions and Change Gears for all standard looms, available for immediate shipment.

for more production

specify



CARD CLOTHING

Maximum output from your card room depends to a large degree upon the selection of the proper Card Clothing, the correct size of wire, proper foundation and the right know-how of operating speeds and settings.

Make sure you start with the right Card Clothing — TUFFER of course. Every type made, from the coarsest wire to the finest—in any foundation you specify—is available at the home of TUFFER.

Team up your operating skill with TUFFER Card Clothing quality to get the most your cards can produce.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

HOWARD BROS.

A-4

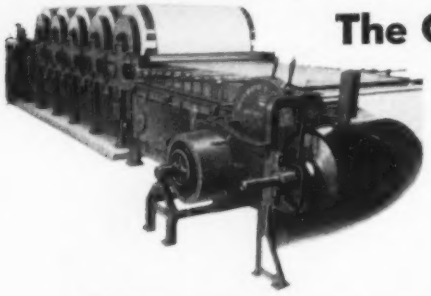
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.
Branch: Philadelphia, Pa. *Direct Representation in Canada*

COCKER MACHINE AND FOUNDRY CO.

World's Largest Designers and Builders of Complete Warp Preparatory Equipment

GASTONIA, NORTH CAROLINA

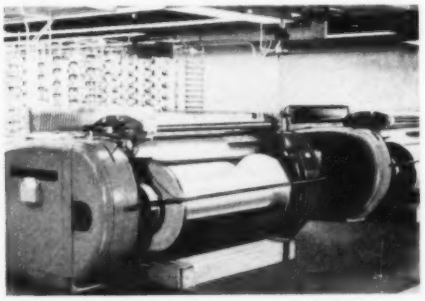


The Cocker 9-Cylinder High Speed Slasher

Made even more outstanding than before by the addition of 1. Differential Compensating Friction Control, which permits continuous high speeds without heating of Friction. 2. The New Cocker Friction which produces hard beams and gives 20% to 25% more yarn per loom beam. For all types of fibres. Also available in 5, 7, 11, and 13 Cylinders.

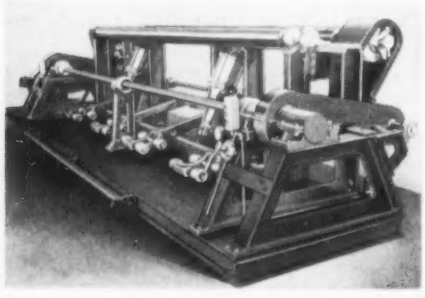
The Cocker High Speed Tricot Warper

By far the most efficient warper of its type, with Air Doffer, Air Operated Presser Roll, and low Front Carrier Roll.



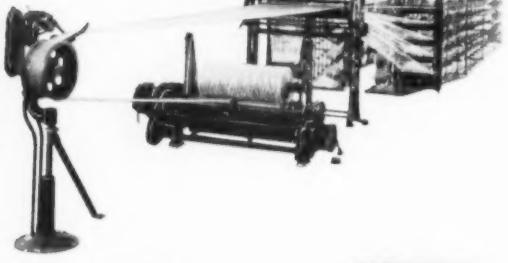
The Cocker SD-49 Warper

This super high speed warper (up to 1000 yds per min.) handles everything from the finest denier yarns to heavy tire cord . . . on section beams with flanges up to 36" diameter.



The New Cocker Heavy Duty Rebeamer for Unsized Warps

The Cocker High Speed Ball Warper

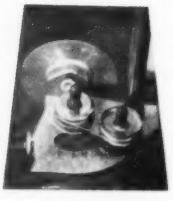


Also:

High Speed Narrow Fabric Warpers
High Speed Collecting Beamers
High Speed Warpers for Dye Beams
Warp Gassing Machines
Warp Dyeing Machines
Special Warp Handling Equipment
Stainless Steel Cooking and Storage Kettles
Stainless Steel Cylinders and Vats for all Textile Purposes
Horizontal Type Magazine Cone Creels Vertical Type Magazine Cone Creels for Cones, Cakes, Cheeses, or Spools

Horizontal or Vertical Type Magazine Cone Creels

Showing the Cocker Adjustable Post Tension with Balloon Breaker



ASK THIS MAN. HE KNOWS THE PAINT NEEDS OF TEXTILE PLANTS.
Call in your local Tropical Distributor!

ONE-THIRD OF U.S. TEXTILE PLANTS KNOW HOW TROPICAL PAINTS HELP REDUCE COSTS, AID PRODUCTION

For Machinery and Equipment; for Labor Safety and Comfort; for General Plant Maintenance — *there is a BETTER Tropical Paint!*

Formulating paints to meet the special problems of textile plants has been a Tropical specialty for generations.

Whether it is a more durable, super-smooth, snag-free finish for bins, trucks and inspection tables; a peroxide-resistant finish for bleachroom rollers . . . the right finishes for dye sticks, skein extractors, hosiery equipment, wood washers, lint-free rollers, oven trays . . . your Tropical representative has the answer.

Machine operators work better, with greater visibility, safety, comfort, when you "color condition" machines, floors, walls, ceilings around them, with Tropical paints.

Economies in general plant maintenance painting are obtained when Tropical paints are used. Less painting means lower costs. *We specialize in heavy-duty maintenance paints for textile plants* . . . call in the Tropical man!

THE TROPICAL PAINT & OIL CO., 1120-1298 W. 70TH., CLEVELAND 2, OHIO

Heavy-Duty Maintenance Paints Since 1883

TROPICAL

Subsidiary of
Parker Rust Proof Company

TEXTILE MACHINERY, INC.

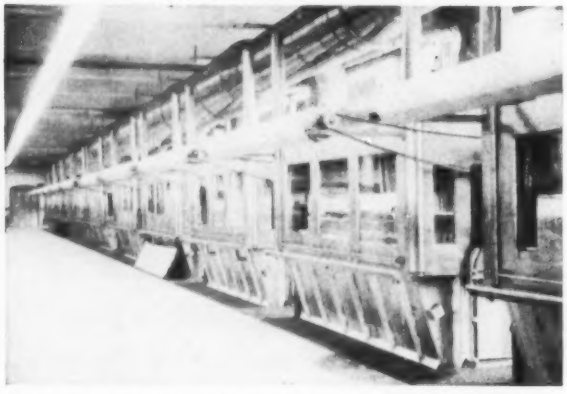
Division of **PORTLAND COPPER & TANK WORKS, INC.**

80 Second Street **South Portland, Maine**

MACHINERY AND STAINLESS PRODUCTS FOR THE TEXTILE INDUSTRY

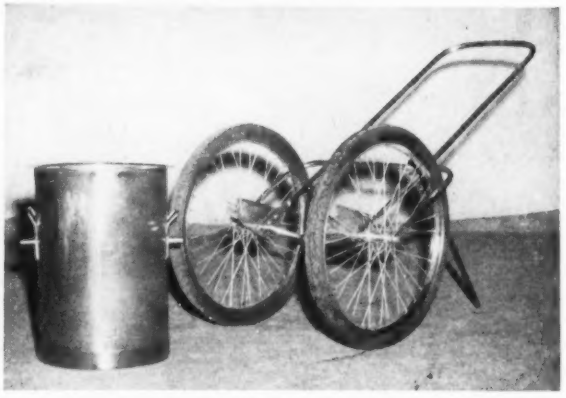
- Batch Cans
- Bleach Tubs
- Cylinders
- Dye Kettles
- Dye Baths
- Dye Boxes
- Idler Rolls
- Lap Trucks
- Laboratory Equipment
- Mixing Kettles
- Racks
- Reels
- Rolls
- Size Kettles
- Tables
- Tanks
- Tank Linings
- Troughs
- Vats

DYE BECKS



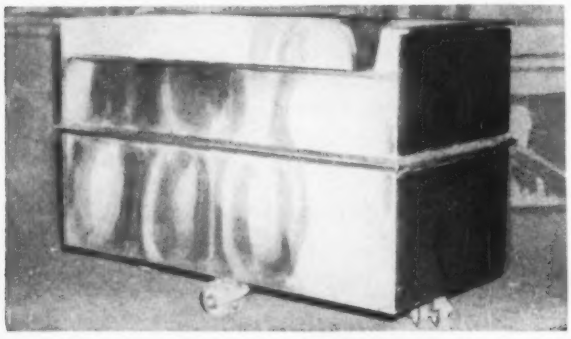
Our new improved dye beck—the "shade-omat"—incorporates number of new features enabling the operator to control the "runback" by use of the new adjustable rake beam and front roll. The versality of the design helps to eliminate dye streaks and other imperfections during the dyeing cycle. Our representative would be glad to show you the features of the "shade-omat" at your convenience. The "shade-omat" is made insulated, non-insulated, open or totally enclosed, to suit your requirements.

BATCH CAN & CARRIER



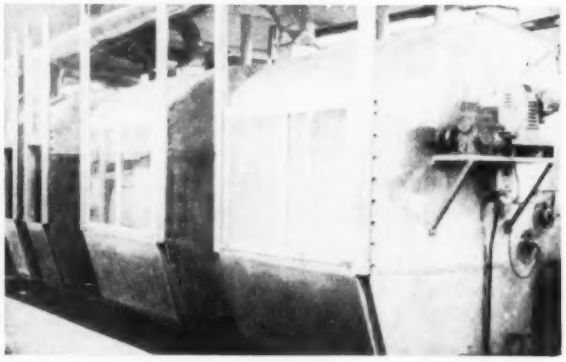
Stainless steel Batch Cans designed with sanitary corners for quick and thorough cleaning. Light weight stainless steel Batch Can Carrier designed to handle batch cans safely and economically by single operator.

STAINLESS STEEL TRUCKS



Rigidly designed stainless steel Lap Trucks to move heavy loads with ease and maneuverability. Constructed for rough treatment and long life.

INSULATED DYE BECKS



Stainless steel laboratory equipment designed and fabricated to suit your requirements. Let our engineers help you select from a wide range of automatic controls the most economical for your individual needs.

CUSTOM BUILT JOBS CHEERFULLY QUOTED • PROMPT ATTENTION GIVEN ALL INQUIRIES

ONLY THE FIDELITY MULTI-DESIGN RIBBER GIVES YOU ALL THESE ADVANTAGES

COLOR WITHIN COLOR PATTERNS

TRUE RIBBED TOPS

UNLIMITED PATTERN DESIGNS

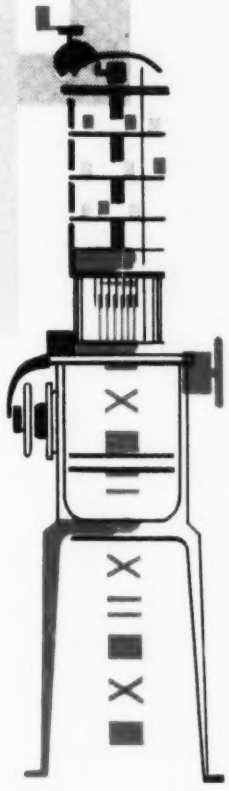
FASTER PATTERN CHANGES

HIGH SPEED DRUMLESS PATTERN MECHANISM

120 VERTICAL COLORS

5 HORIZONTAL COLORS

● 5-COLOR KNOT TYER AND YARN SELECTOR



Write for samples of Fidelity *True* Ribbed Fabrics. See the many unique color within color pattern designs—limited only by your imagination. Compare. Then decide for yourself.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

Export Dept.:
25 Beaver Street, New York 4, N. Y.

Canadian Representative:
W. J. Westaway Co., Ltd., Hamilton, Ontario, Canada.

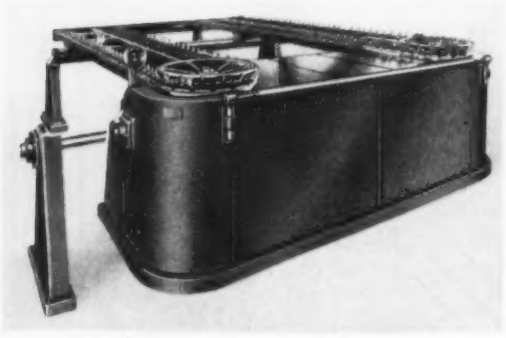
For more information, write direct or use Reader Service post card.

MARSHALL and WILLIAMS CORPORATION

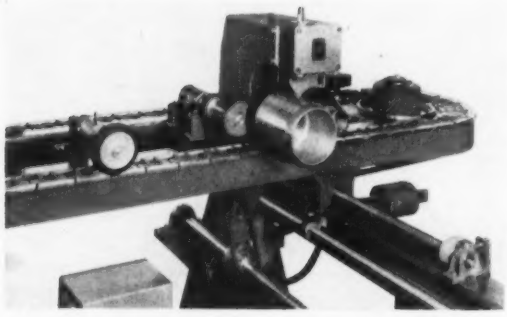
GREENVILLE, S. C.
Tel.: Greenville 2-7338

PROVIDENCE, R. I.
Tel.: HOpkins 1-3450

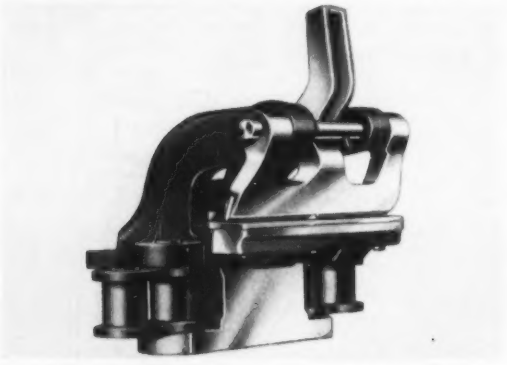
EXPORT AGENT
Francis H. Love & Son
75 West St., New York 6, N. Y.



M&W HIGH-SPEED TENTER FRAME



M&W POSITIVE OVERFEED WITH SELVAGE GUIDER



M&W PATENTED No. 11 TENTER CHAIN CLIP

M&W TENTER CHAIN REBUILDING SERVICE

Customers tell us that ours is the most efficient and economical service of this type available. We thoroughly clean the chains, disassemble them, carefully inspect, replace all defective parts, reassemble, match and ship ready for use. M&W rebuilt tenter chains are good for many years of additional service.

PIN PLATES

We also make and repin all types of pin plates for cotton, synthetic, and woolen and worsted finishing plants.

HIGH SPEED TENTER FRAMES

Speeds up to 250 ypm, when equipped with M&W Patented No. 11 Roller Type Tenter Chain.

MERCERIZING TENTERS

Heavy, wide parallel rails. Totally enclosed overhead drive units. Rugged construction throughout.

TENTERETTES

Short tenters built to any maximum width, with either straight or hinged rails. Made only by M&W.

POSITIVE OVERFEED WITH SELVAGE GUIDER

All fabrics, any finish. Controls slack or overfeed from −5% to +30%, maintains pinning of each selvage on chain within 1/16" tolerance, at speeds up to 100 ypm. Guider is faster, more accurate—brings cloth to meet rails instead of rails to meet cloth.

TENSIONLESS BATCHERS

Sturdy, trouble-free machines. Also constant tension batchers of equally rugged construction.

SWING PLAITERS

Anti-friction bearings throughout. Designed for easy installation in any location in the plant.

LET-OFF STANDS

Movable, with casters—or with fixed base, swiveling to permit easy alignment of the cloth.

PIN PLATES

All types and sizes for plants finishing cottons, synthetics, woolens and worsteds.

TENTER CLIPS IN 11 DIFFERENT STYLES

#8 Mercerizer Clip, with top support; #11 Roller-Type Tenter Clip; #12 Sanforizer or Clip Expander Clip; #20 Universal Clip, for regular feeding or overfeeding without pins; #10 & #15 Pin Clips.

PARTS FOR ALL TYPES OF TENTER FRAMES AND TENTER CLIPS

We carry parts for practically all makes of tenter chains and frames. Many years of experience in this type of work guarantee prompt and dependable service.

NON-FLUID OIL

TRADE MARK REGISTERED

The Long Lasting Lubricant

NON-FLUID OIL is the made-to-order, long lasting lubricant that stays *in* bearings and *off* yarn while ordinary oil escapes from bearings, blackens yarn and rots leather or cork cots.

Today, 7 out of 10 mills use NON-FLUID OIL for top and bottom rolls and saddles of Long Draft frames. The result: they get greater production of clean yarn at lower lubricant cost because NON-FLUID OIL gives longer and better lubrication and does not drip or spatter.

For proof of the performance of NON-FLUID OIL, write for Bulletin T-13 and free testing sample for a convincing demonstration.

NEW YORK & NEW JERSEY LUBRICANT CO.

292 MADISON AVE., NEW YORK 17, N. Y. • WORKS: NEWARK, N. J.

SOUTHERN DISTRICT MANAGER: Lewis W. Thomason, Jr., Charlotte, N. C.

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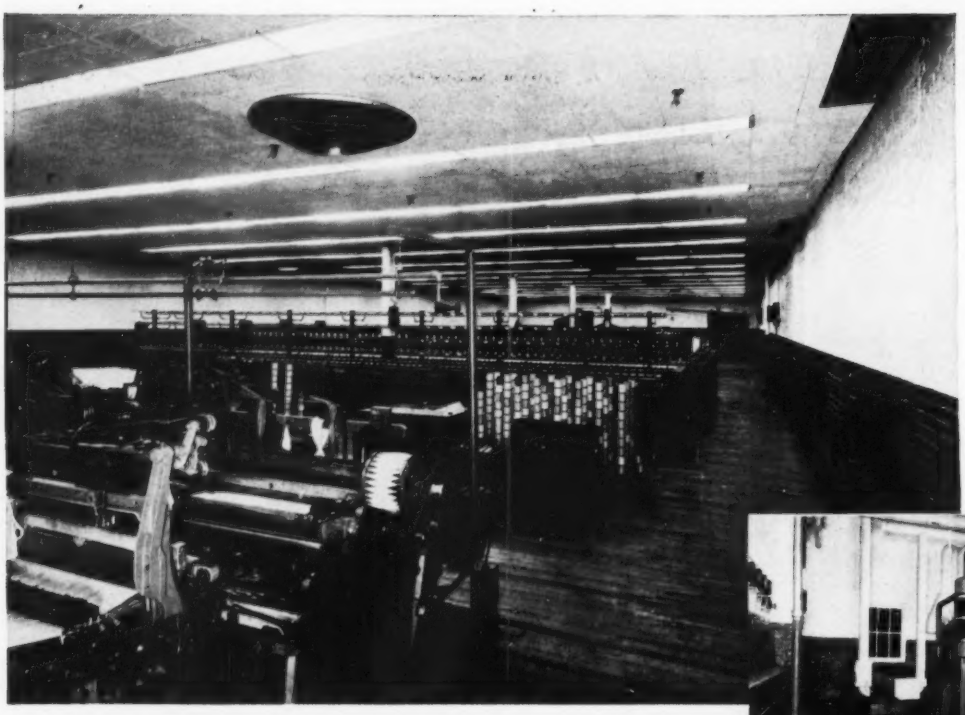
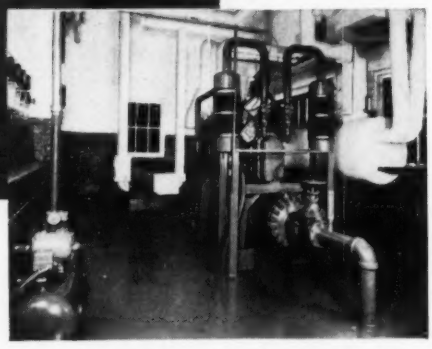
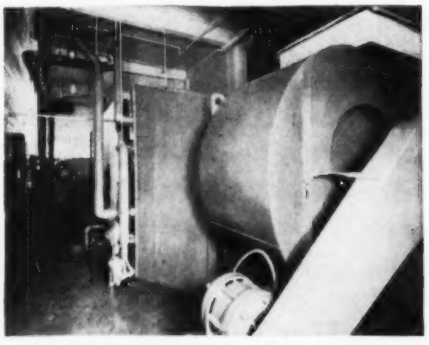
NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.



Pilot Plant of Pepperell Manufacturing Company, Lindale, Ga.



At the heart of the pilot plant is this air conditioning equipment room — containing compressors, water chiller and cool water circulating pump.



Apparatus room contains air blower and washer

PEPPERELL'S PILOT PLANT

. . . synthetic fiber research at its best!

Amco Central Station Air Conditioning meets Pepperell's exacting specifications for control of temperature, humidity, air cleanliness.

When Pepperell Manufacturing Company built their "miniature mill" at Lindale, Georgia, they set out to produce a nearly perfect pilot plant for test operations with the newest synthetic textile fibers. To maintain complete atmospheric control the year-round, they had Amco install central station air conditioning with refrigeration and electrostatic air filtering. Accurate, adjustable control of temperature and humidity assures the exact conditions required for any given pilot operation. All ducts are hidden for neat appearance and easy housekeeping.

Of course, it isn't always practical, or desirable, to "streamline" a plant like this. Your plant — like many mills — may already have a modern, efficient humidification system. You can easily add COOLING with an Amco ductless system — without discarding anything, and by making only modest alterations.

Amco systems give you a choice of humidification, evaporative cooling (central station, dry duct, or ductless types) or refrigeration, alone or in combination. You can rely on Amco to give you advice on the system best suited to your needs. Call an Amco engineer.

Benefits of Controlled Humidification and Cooling

Regain maintained • yarn counts kept more even • static electricity eliminated • closer machine adjustments and higher speed maintained • less broken fibers, dust and fly • cleaner yarns • stronger, more even fabrics • greater worker comfort and efficiency

AMCO

AIR CONDITIONING SYSTEMS since 1888

Humidification • Evaporative Cooling (Ductless or Central Station) • Refrigeration

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.

To prevent snags and obtain more uniform package quality

TAKE UP SYNTHETIC YARNS ON

SPAULDITE HEADLESS PACKAGE TUBES

Made from XXIO SPAULDITE Laminated Phenolic Plastic, a special grade developed to provide full resistance to the tremendous crushing strength of synthetic yarns in the packaging process.

The smooth, snag-free finish of Spauldite Headless Package Tubes is greatly superior to metal in its resistance to nicks, dents, cuts or burrs. It also permits uniform heat distribution in the steaming operation, resulting in a more uniform package than is obtainable with metal tubes. There is no danger of burning.

Spauldite Headless Package Tubes also feature extreme lightweight (one-half that of aluminum), and they will not oxidize. Tubes can be adapted for use on all types of twisting machines for headless package winding.

A BETTER BOBBIN FOR ALL SYNTHETIC YARNS

A *new dynamically balanced* Spaulding Bobbin* constructed of SPAULDITE Laminated Phenolic Plastic in combination with sturdy aluminum tubing.

REMEMBER SPAULDING ALSO
for Separator Blades, Lap Rolls, and Receptacles. Also Pirn Caps and Redraw Caps for Headless Package Tubes, Sizing Tubes, Take-up Bobbins and Tubes on which "Dacron" (Dupont Trademark) is shipped.

SPAULDING FIBRE COMPANY, INC., TONAWANDA, N. Y.

*PATENT APPLIED FOR

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A. A. Andersen & Co.
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Mail Coupon For Full Information

SPAULDING FIBRE COMPANY, INC.
TONAWANDA, NEW YORK

We want to know more about Spauldite Headless Package Tubes and the new Spaulding Bobbin.

Name _____

Company _____

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For

EMULSIONS

SUSPENSIONS

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CHEMICOLLOID LABORATORIES

INCORPORATED

30 CHURCH STREET, NEW YORK 7, N. Y.

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MANUFACTURERS AND DISTRIBUTORS

—THE CHARLOTTE COLLOID MILL—

THE CHARLOTTE

GROOVED PRINCIPLE

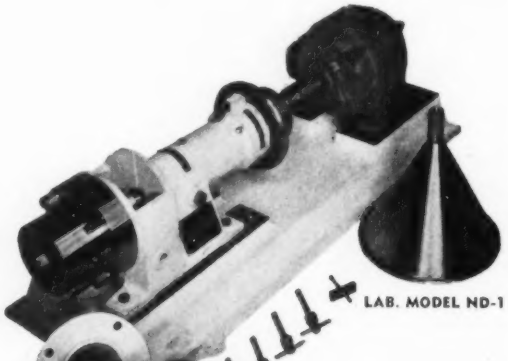
PRODUCTS—

THE CHARLOTTE COLLOID MILL—

For the manufacturer of emulsions—Textile Soaps — Delusterants — Printing Pastes — Vat Dyes — Combination of Pigments with the various vehicles, etc.

EVERY TEXTILE CHEMIST SHOULD INVESTIGATE THE CHARLOTTE COLLOID MILL

Hundreds are in daily use rendering trouble-proof service with uniformity of product, year after year—durable.



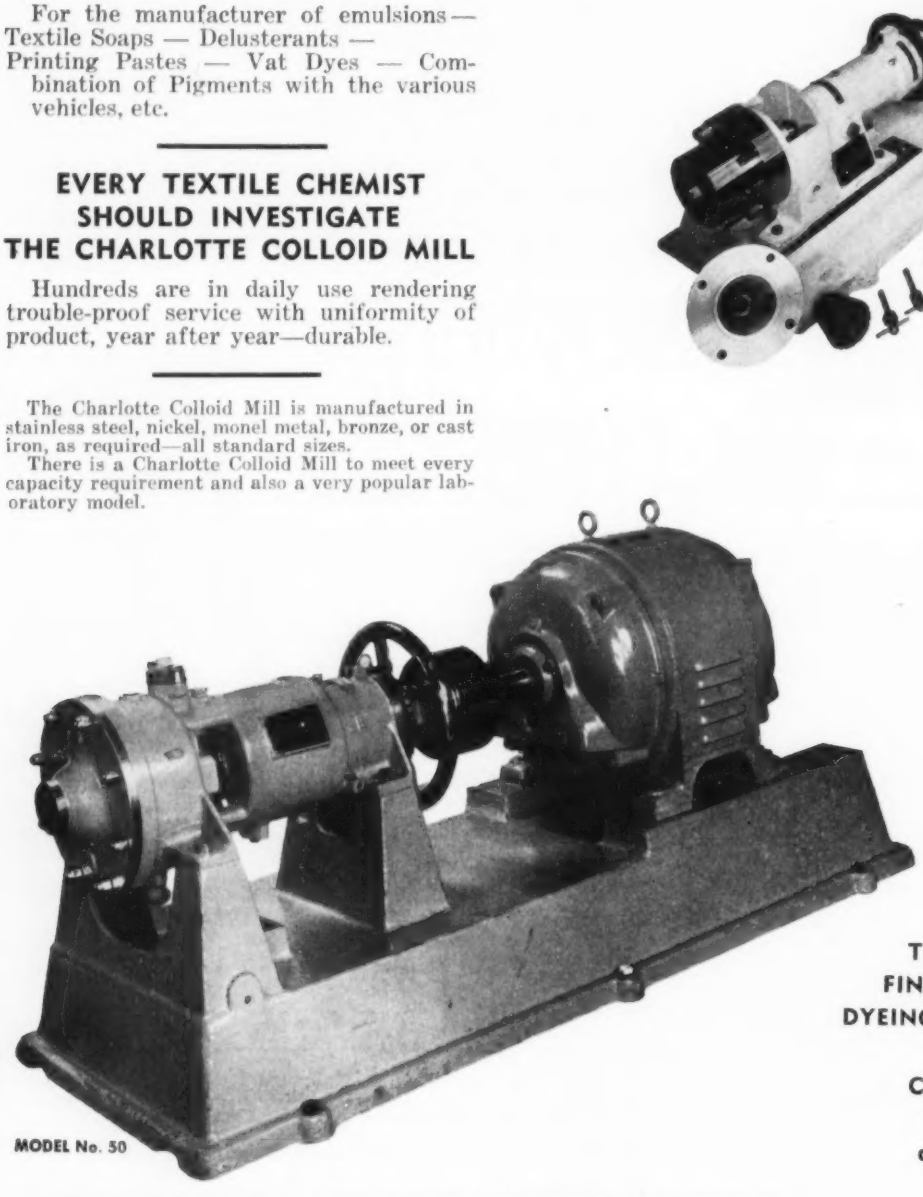
LAB. MODEL ND-1

The Charlotte Colloid Mill is manufactured in stainless steel, nickel, monel metal, bronze, or cast iron, as required—all standard sizes.

There is a Charlotte Colloid Mill to meet every capacity requirement and also a very popular laboratory model.

THE CHARLOTTE COLLOID MILL
Laboratory Model

is of the same principle and rugged construction as the larger models and assures laboratory tests of reliable character and also for small scale production operations.



MODEL No. 50

TEXTILE MILLS
FINISHING PLANTS
DYEING ESTABLISHMENTS

◆

Compounders of Textile Soaps and Chemicals

THE CHARLOTTE PRINCIPLE-GROOVED ROTOR AND STATOR

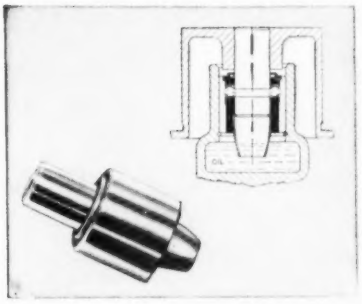
NEW DEPARTURE division of GENERAL MOTORS

BALL BEARINGS

EXECUTIVE OFFICES, BRISTOL, CONNECTICUT

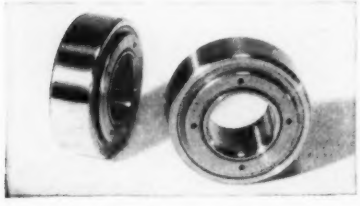
BOSTON	CHICAGO	DETROIT	LOS ANGELES	NEW YORK	PHILADELPHIA	BERKELEY	AND IN OTHER
31 St. James	332 So. Mich.	7-122 GM Bldg.	5035 Gifford	1775 Broadway	850 E. Luzerne St.	1716—4th St.	PRINCIPAL CITIES

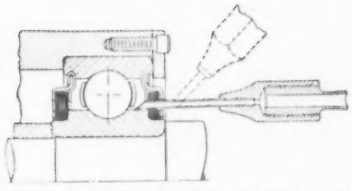
TENSION PULLEY BEARINGS



Designed for the vertical mounting of idler or tension pulleys for speeds above 1000 r.p.m. Instead of the conventional bearing inner race, a solid steel shaft extends upward enough to provide a seat for the pulley hub. To the lower end of this shaft is fitted a centrifugal pump which lifts a continuous film of oil from a reservoir and delivers it in the form of a fine spray or mist directly to the balls and raceways. The lubricant circulates but does not escape nor become contaminated with foreign matter.

INJECTOR SEAL BEARINGS

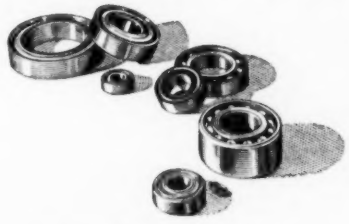




This bearing features a new seal developed for use with the popular ND Seal bearings in the standard and light series sizes. Small holes in the outer metal of the seal permit revitalizing the old bearing lubricant at intervals commensurate with operating conditions with injection needles.

Lubrication method does not require removal of the bearing from the housing. Neither does it involve the use of nipples, grease passages, plugs or removable seals.

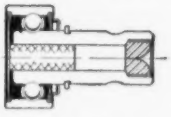
NEW DEPARTURE BALL BEARINGS



Distributors in the South:

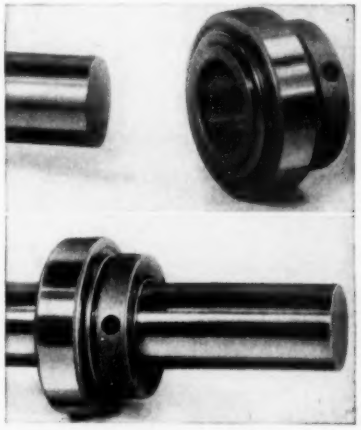
Albany, Albany Bearing Service
Atlanta, Collins Bearing Co.,
R. L. Fulghum Co.,
Moffatt Bearing Co.
Augusta, Augusta Mill Supply Co.
Birmingham, Moffatt Bearings Co.,
Owens-Richards Co.
Bluefield, Superior Sterling Co.
Charleston, S. C., Cameron & Barkley
Charlotte, Moffatt Bearings Co.
Charleston, W. Va., Harris Pump & Supply Co.,
West Virginia Bearings, Inc.
Chattanooga, Bearings and Transmission Co.
Chattanooga, Fischer Bearing Co.,
Volunteer Brgs. & Transmission Co.
Columbus, Columbus Bearings Service
Fredericksburg, Richmond Auto Parts
Greensboro, Carolina Bearings Div. of Tenn. Brgs.
Greenville, Carolina Bearings, Carolina Supply Co.
Hazard, Kentucky Bearings Service
Huntington, West Virginia Bearings
Kingsport, Tennessee Bearings, Inc.
Knoxville, Fisher Bearing Supply Co., Tennessee Bearings, Inc.
Lexington, Womwell Automotive Parts
Louisville, Kentucky Ball & Roller Bearing Div. of Indiana Bearings, Kentucky Bearings Service, Inc.
Macon, Bearings & Drives, Inc.
Macon, Collins Bearing Co. of Macon
Madisonville, Bearings Service Co.
Memphis, Southern Bearing Service, Walmsley Bearing Co.
Mobile, Bearings & Transmission Supply, Russell Electric Co.
Mobile, Mader Bearing Supply
Montgomery, Alabama Bearings Co.
Nashville, Buford Brothers, Inc., Industrial Bearings Service
Norfolk, Standard Machine & Supply
Owensboro, Kentucky Bearings Service
Petersburg, Richmond Auto Parts Co.
Richmond, Moffatt Bearings Co.
Richmond, Richmond Auto Parts Co.
Roanoke, Virginia Bearings & Supply
Rome, Battey Machinery Co.
Savannah, Bearings & Drives, The Cameron & Barkley Co.
Savannah, Morgan's Inc.
Wheeling, West Virginia Bearing, Inc.

TAPE TENSION PULLEY BEARING



Designed for horizontal mounting of textile tape tension pulleys. Recommended for practically any installation where a pulley or a roll must give uninterrupted service with minimum attention. A few drops of oil once or twice a year fed into hollow shaft, leads through filter to sealed area around ball assembly, and revitalizes original grease.

ADAPTER BEARINGS



The New Departure Adapter bearing, Type-A, is intended primarily for use with standard cold drawn steel shafting to inch dimensions, where bearing locating shoulders and threads for locknuts are undesirable. Where a slight amount of eccentricity is permissible, they eliminate the need for grinding bearing seats to close tolerances for press fits.

BIRCH BROTHERS, INC.

Established 1883

SOMERVILLE 43, MASS.
Telephone: Prospect 6-3512

Builders of
NEW and IMPROVED DYEING and FINISHING MACHINERY
for Woolens, Worsteds, Cottons, Rayons, Silks, Pile Fabrics, and Carpeting. Also MILL SEWING MACHINES

WELL BUILT MACHINES of MODERN DESIGN

CLIFFORD W. BIRCH, *Pres.*
HAROLD W. BIRCH, *Mgr.*

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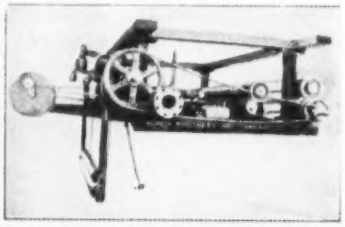
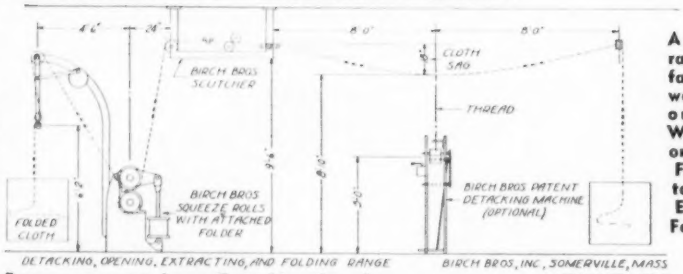
STANLEY W. BIRCH
CLIFFORD W. BIRCH, JR.
RICHARD BRIGGS
FRANCIS W. BIRCH

Southern Representative
JOHN C. COSBY
Greenville, S. C.



New Heavy Duty all Ball Bearing Cloth Opening and Folding Machine with Vacuum Extractor. All Drives by Cut Gears or Roller Chain Drive by Built-in Motor. For opening and extracting woolens, worsteds, plushes, cottons and rayons.

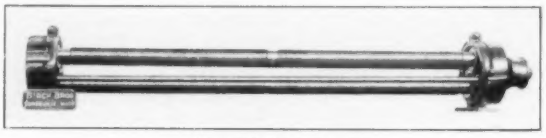


DETACKING, OPENING, EXTRACTING, AND FOLDING RANGE — BIRCH BROS., INC., SOMERVILLE, MASS.

Range removes twist, pulls tacking thread, opens, extracts, folds or rolls in one continuous operation.

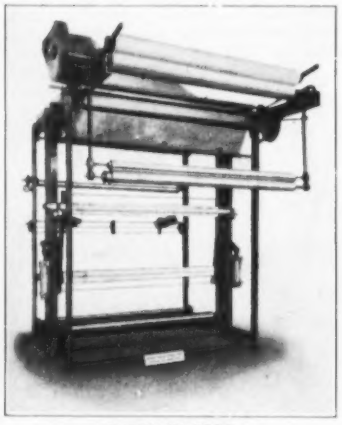
An opening range for all fabrics of all weights. Rayons, Cottons, Woolens, Rayon Blends, Pile Fabrics, Detacks, Opens, Extracts and Folds.

Patent re-enforced Adjustable Slot Vacuum Box with Handwheel adjustment and automatic ring type slot seal, gives uniform extraction, speeds drying, saves space and expensive equipment.



New Ball Bearing Adjustable Spiral Opening Roll Unit

For removing wrinkles and doubled selvedges from all types of fabrics during open width process. Rolls and Stay Rods may be Stainless Steel, Brass or Cold Rolled Steel. Rolls have cut threads; Gears are cut, one of each pair being of fibre for quiet operation; Gears are guarded; Bearings for Rolls are self-sealed Ball Bearings. Used on Padders, Mangles, Mercerizing Ranges, Open-Width Machines, Printing Machines, etc.



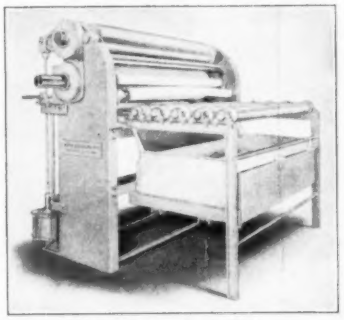
NEW SINGER with Two Compression Burners

Also NEW AND IMPROVED

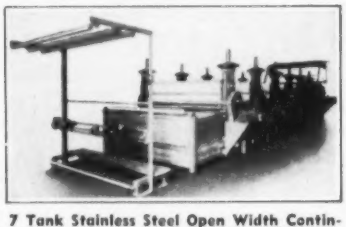
ADJUSTABLE SPIRAL OPENING ROLLS
ANGULAR GUIDES
BATCHERS—All types
BRUSHES
BURLING TABLES—Power
Cloth CARBONIZERS
Continuous CRABBING MACHINES
COLOR STRAINERS—Vacuum Type
COMPENSATORS
CONICAL OPENERS—Stainless, etc.
DE-TACKERS—Floor or Ceiling Type with Automatic Stop
Combination DEWING & STEAMING MACHINES
DYE JIGS—All types
DYE KETTLES—Stainless
Cloth EXPANDERS—Curved Single and 3-Bar of Rubber or Stainless—Bristle Brush, etc.
Cloth FOLDERS—Ceiling type
Sheeting INSPECTION RANGES
INSPECTION TABLES—Power
Knit Goods SPLITTING, OPENING, AND EXTRACTING MACHINES
MANGLES—All types
MANGLES—Tandem
OPEN SOAPERS—Stainless
OPENING & FOLDING MACHINES For Cloth
PADDING MACHINES
PLAITERS—Traverse for Cloth in Rope form
PERCHES—Several Types
ROLLERS—All types
SCOURING MACHINES—Open Width
Cloth SCRAYS
SCUTCHERS—for Cottons and special machines for RAYONS
SELVEDGE OPENERS
SIMPSON WINDERS
SINGEING MACHINES—new and improved horizontal for worsteds, and vertical for cottons
SQUEEZERS—Rope and Open Width
STRETCH ROLLERS
High Speed TACKING MACHINES
TIGERS
Patent VACUUM SLOT SEAL
High Speed VACUUM EXTRACTORS with ADJUSTABLE SLOT AND VARIABLE SPEED—Patented
Vacuum Extractor FLOCK TRAPS
WASHING MACHINES
Combination WETTING-OUT, VACUUM EXTRACTING and ROLLING MACHINES
WEFT STRAIGHTENERS
Yardage Clocks
YARN BALANCES
SEWING MACHINES
Circular Gray Room and Railway; Portable, foot or Motor Driven. All fitted with either Butt-seam Merrow Head or "Coronation" or "Excel" chain stitch Heads.

For other machines, see previous catalogs or send for circulars.

Single-Bar Curved Rubber Expander with increased thickness of rubber giving longer life and better stretch, and fitted with trouble-proof bushings. Also made with 3 Bars.



TWO ROLL QUETSCH
for applying resin treatments etc. fitted with roller bearings, rubber expanders and stainless heated tank.



7 Tank Stainless Steel Open Width Continuous Machine for Scouring and Crabbing Gabardines, Worsteds and Rayon Blends. Machine fitted with roller bearings, pressure applied by air, individual motor drive for each pair of Squeeze Rolls insuring uniform tension. Equipped with temperature and pressure controls.

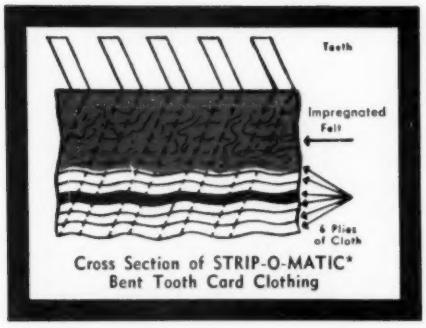
STAINLESS STEEL CONICAL OPENER
Equipped with *rubber rolls* for guiding and keeping fabric open on dye kettles or Continuous Machines.

Booth

Originators of **STRIP-O-MATIC***

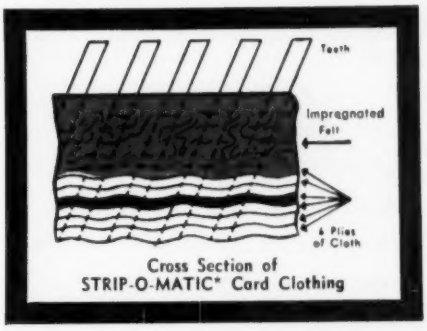
CARD CLOTHING NEWS AND VIEWS

STRIP-O-MATIC*

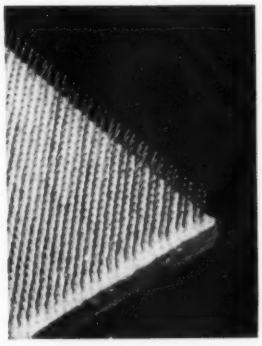


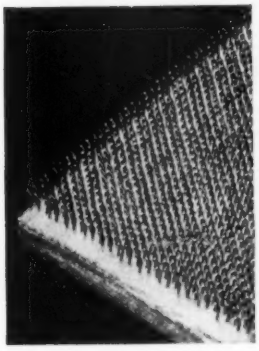
Cross Section of STRIP-O-MATIC* Bent Tooth Card Clothing

NOW AVAILABLE IN TWO TYPES



Cross Section of STRIP-O-MATIC* Card Clothing


Fexifort Woolen Card Clothing


Felt Face Woolen Card Clothing

STRIP-O-MATIC* CARD CLOTHING reduces stripping waste, cuts "down time", provides longer runs between stripping—all with improved yarn quality. Now, for the first time, STRIP-O-MATIC* has been made available in both straight *and* bent tooth construction in a complete range of sizes to meet the requirements of individual users.

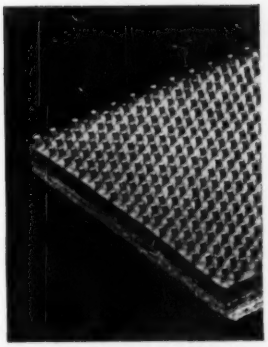
STRIP-O-MATIC* and CONVENTIONAL **CARD CLOTHING for all fibers.**

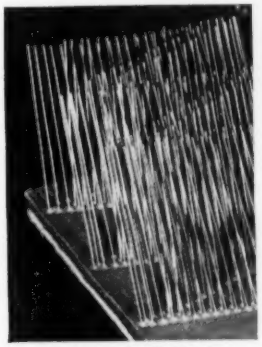
CONVENTIONAL CARD CLOTHING with round or double convex wire in a complete range of sizes and a wide variety of foundations. In addition to those illustrated here, we regularly manufacture a complete line of C.C.W.C. cotton card clothing, wool face carpet and asbestos clothing and rubber faced worsted clothing.

QUAILITY & SERVICE FOR OVER 60 YEARS

E. Allen Knapp Jr

* Patented


STRIP-O-MATIC* Card Clothing


ZZ Fancy Card Clothing

Booth

BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA.

For more information, write direct or use Reader Service post card.

R. D. COLE MANUFACTURING CO.

ESTABLISHED 1854

NEWNAN, GEORGIA

BOILERS, TANKS and STEEL PLATE WORK

PRODUCTS

Welded and riveted Processing Vessels for Textile Industry; Stainless Steel, Alloy Steel and Lead Lined, Tin Lined, Nickel-Clad Steel Vats and Tanks for every service. Horizontal Return Tubular Boilers and Cole-Manning Vertical Boilers; Steel Pipes and Smokestacks; Breechings; Air Ducts Elevated Tanks and Towers; Acid Tanks; Dye Vats; Kiers, Fuel Oil and Caustic Soda Storage Tanks; Engines; Castings; Bubble Towers, Gas Scrubbers, Creosoting Cylinders and other heavy Pressure Vessels; Starch Kettles; Standpipes; Air Receivers; Digestors; Storage Bins; Peroxide Storage; Jig Boxes, Flumes.

1,500,000 Tank at Spartansburg, S. C.

ELEVATED STEEL TANKS

Special designs for steel sprinkler tanks or domestic service will be furnished by our Engineering Department. Our elevated tanks are correct in design and the simplicity of the structure contributes to its low cost of maintenance. Sprinkler tanks and equipment are designed to incorporate the recommendations of all insurance authorities.

Our facilities provide for the design and construction of all forms of steel plate work, including stacks, acid tanks, pressure vessels, structural frames and towers.

ALUMINUM STORAGE TANKS

Special design of Aluminum Tanks, either in pure Aluminum or alloys for storage of peroxygen, acetic acid, of welded construction to meet requirements of ASME Code in sizes up to and including 15,000 gallons storage and working pressures up to 50#.

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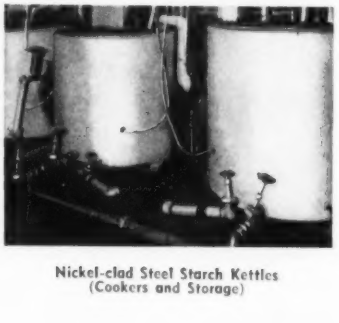
These boilers are constructed in a most approved manner and of materials in full accordance with the A.S.M.E. Code.

WELDED PROCESSING VESSELS (Stainless)

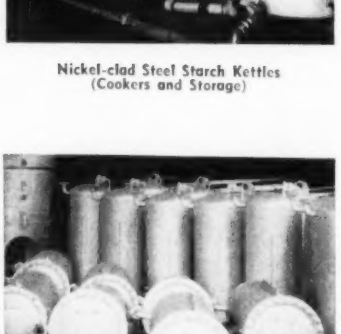
Special designs of Welded Vessels in Steel, Stainless Steel or Alloy Materials, with or without agitating devices, for various textile processes.

NICKEL-CLAD STEEL and MONEL-METAL-LINED TANKS

Special designs of dye vats, kiers, jig boxes, or other processing vessels for the finishing and dyeing industry can be manufactured of nickel-clad steel or of standard steel lined with monel metal, or stainless steel welded construction.



Nickel-clad Steel Starch Kettles (Cookers and Storage)



Stainless Steel Chemical Vats

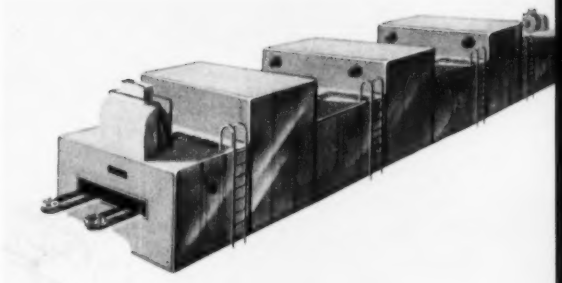
We can also produce special machinery or vessels for your own needs or for resale purposes. Our Engineering Department will gladly submit designs to meet any requirements. Write for a copy of our general catalog, "Tank Talk."

TANK BUILDERS FOR OVER 80 YEARS

PROCTOR & SCHWARTZ · INC ·

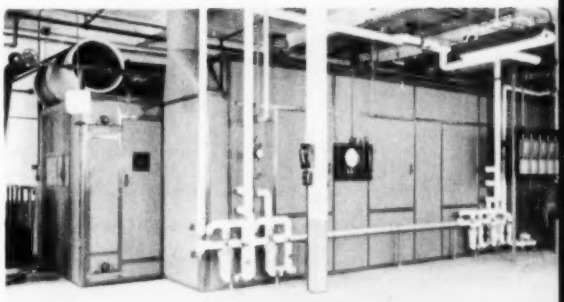
PROCTOR *Drying Equipment*

NEW TENTER HOUSING



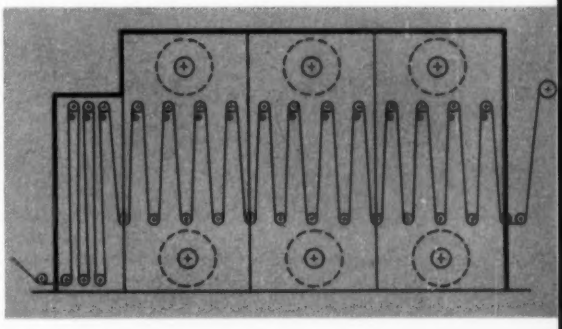
Completely redesigned to offer many advantages never before found in this type of machine. UNIFORMITY—The air circulation system is arranged to give uniform distribution of air from center to side of the material. FLEXIBILITY—Dampers are furnished to control the balance of air. With this control a complete range of fabrics can be handled with ease. PRODUCTION—This new Proctor tenter housing has the greatest drying capacity per foot of length ever offered to the industry . . . with 50% to 100% more drying capacity than conventional tenter housings. ECONOMY—The operating cost, including labor and power, results in sufficient saving to pay for the equipment in as little as two years. CONSTRUCTION—Entirely new panel construction results in a minimum of interior structural members and combined with accessibility to the interior, cleaning is greatly facilitated.

NEW LOOP DRYER & CURER



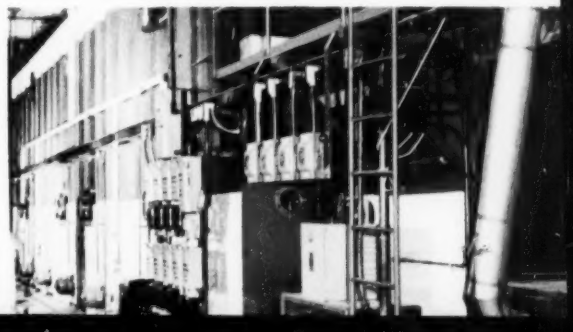
Another completely redesigned machine offering many exclusive advantages. DRYING AND CURING UNIFORMITY—An entirely new concept of air movement provides the greatest drying and curing uniformity ever obtained in this type of equipment. PRODUCTION—Maximum capacity is being obtained with minimum power requirements. LESS DOWN TIME—MORE PRODUCTION—Maintenance time is drastically cut by these features: Direct connected motors for fans eliminate belt and coupling maintenance. Conveyor designed for long trouble free operation. An entirely new panel construction gives the smoothest interior yet attained, contributing to cleanliness. Proper application of lint screens and accessible heater coils further keep cleaning time to a very minimum. FLEXIBILITY—Standard design machine is suited to wide range of applications—but may be custom designed where necessary.

NEW ROLLER DRYER & CURER

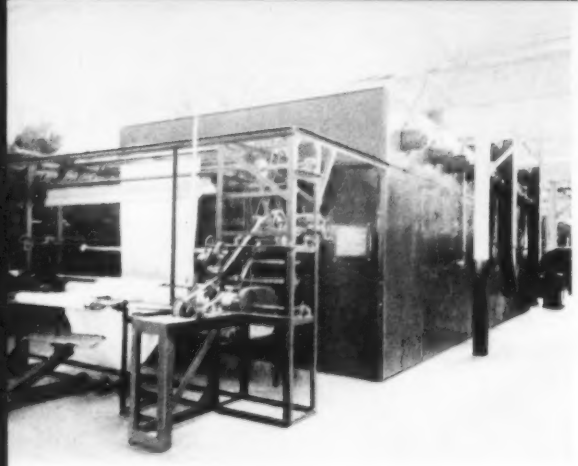


New unit construction roller dryer—curer offers these Proctor advantages: BALANCED AIR CIRCULATION which gives even drying without shading or migration of finish or color—a *must* for pad dye ranges. DRYING TEMPERATURES may be regulated to suit individual conditions. SHADED POLE MOTORS are provided to drive rolls. These motors automatically vary the roll speed with the cloth tension—an absolute necessity if "no stretch" drying is to be accomplished. ACCESSIBILITY—rolls and heaters are readily accessible for easy cleaning. LINT SCREENS are easily removed, protect coils from clogging with lint and further reduce cleaning time. CONSTRUCTION—New panel construction results in exceedingly smooth interior. Unit construction permits building dryer or curer to suit your individual capacity requirements.

Advanced LOOP AGER FOR PRINT GOODS

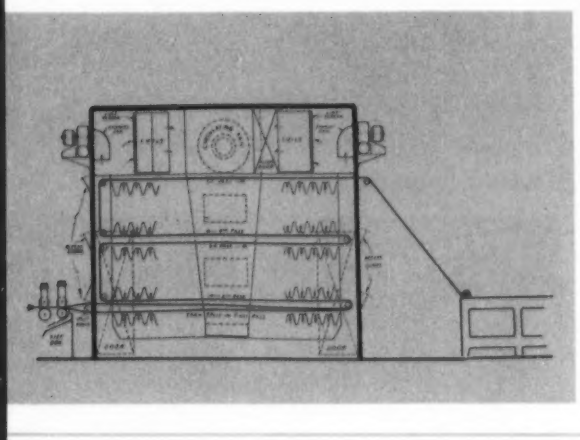


This machine is revolutionary in the aging of vat colors on print goods because of SAVINGS in labor, QUALITY of work and the reduction to a very minimum of the seconds volume experienced in existing agers. Also, its compactness saves floor space. At no time is the printed face of cloth in contact with rolls or other members in its passage through the machine. It is VERSATILE in the handling of a wide range of goods from very light fabrics to heavy drapery materials.



Improved MULTIPASS AIRLAY DRYER

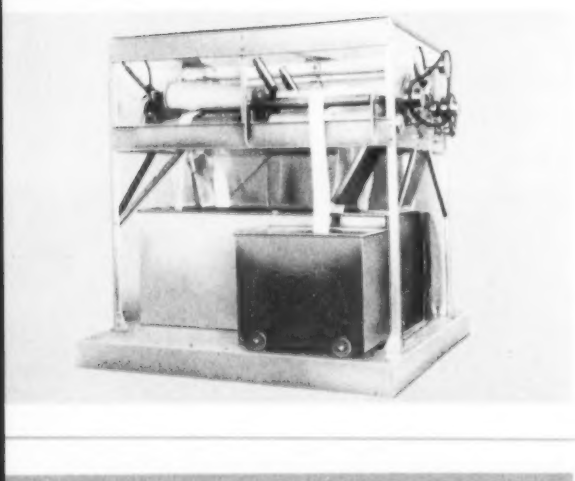
For the ultimate in the appearance of fabrics that are to be dried without tension, this dryer is ideally suited. Fabric is held gently and evenly against the conveyor, by the pressure differential between the adjacent air chambers. The air serves the dual purpose of drying the material and helping to carry it. With this "airlay" arrangement the material is in a relaxed condition during drying . . . one of the essential reasons for the remarkable results being obtained with this machine. It assures a uniform distribution of air over all of the material, resulting in rapid drying. *Minimum maintenance* is required as a result of design improvements made recently. The redesigned dryer permits operation at high temperatures and high speeds. It can be built to meet individual output needs.



NEW HOT AIR SLASHER DRYER

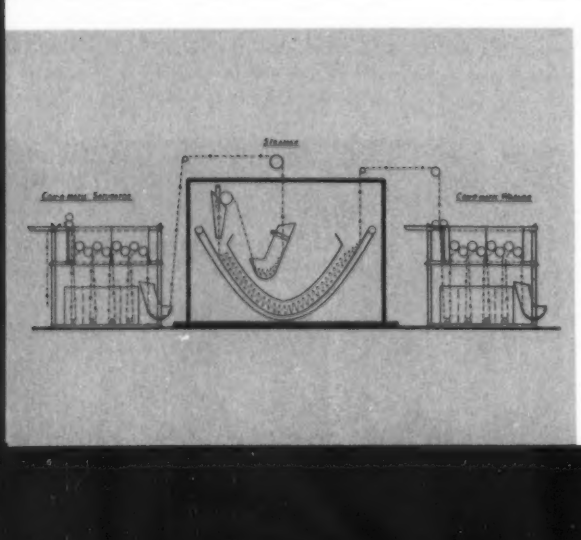
Designed for maximum production of quality yarn—capacity varies from 900 to 1,500 pounds of dry warp per hour. PATENTED PARALLEL FLOW NOZZLE ducts carry mild, hot air to and away from the warp in such a way that tangling or rolling is virtually eliminated.

WARP IS SPLIT at the entering end, reducing sticking together and assisting in separating action. This reduces shedding and results in higher quality yarn. COMPLETE ACCESSIBILITY to heating coils, fans, air ducts, warp and dryer housing is provided for easy cleaning. Over 22 linear yards of warp makes five passes through the slasher—each pass directly subject to controlled air from an individual duct. All fans are directly connected to their motor shafts —eliminating belt or coupling drives, increasing efficiency and reducing maintenance costs. Housing is of sturdy new design, all steel construction with smooth interior for easy cleaning and requires minimum floor space.



NEW CON-O-MATIC WASHER

This completely new washer combines simplicity of design with efficient performance and results in operating advantages impossible with any other conventional slack washer. SELF COMPENSATING ROLLERS keep an even amount of fabric in each tank, without any effort or attention on the operator's part. Through the use of tapered squeeze rolls (patent pending) tanks are kept filled to the desired level *automatically*, thus assuring tension free operation. Synchronization is accomplished without elaborate drive mechanisms, drastically reducing maintenance. The new Con-o-matic requires appreciably less floor space than conventional equipment. Considered first as a washer, its basic principle makes it adaptable for use as a saturator and it is being considered for use in a continuous dye process. In fact, it can be used wherever fabrics are to be processed in liquid.



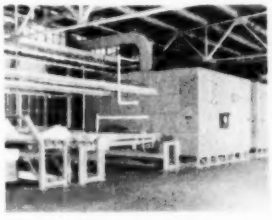
NEW CONTINUOUS BLEACH FOR TUBULAR KNITS

The greatest advance in tubular knit bleaching made to date, this new range consists of a Con-o-matic prewasher, a steaming unit and a Con-o-matic final washer. The steaming unit is a steam tight, insulated stainless steel chamber. Material is fed into this unit automatically and plaited on the conveyor *without any tangling*. The conveyor is driven and carries (does not pull) the material through the steaming cycle. Material is conveyed from the steamer to the final washer automatically. Production of 1,500 pounds per hour is possible. Water requirements are drastically reduced, since the range uses a total of only 40 gallons per minute of waste water. An excellent bleach is being obtained in commercial operation. There is no rubbing or scuffing of material. Only two men are required to operate the entire range. Arrangement of the units may be varied to suit available floor space.

OVERFED PIN TENTER

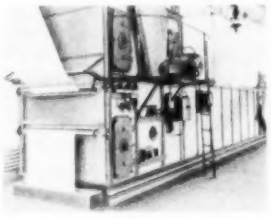
Assures controllable overfeed, accurate guiding and balanced, controlled air circulation. Resin impregnated fabrics are dried in the open width without danger of creasing or migration. Ultimate in shrinkage control. Relaxed drying insures top flight quality and a full hand. Sensitive guiding mechanism provides accurate guiding up to and in excess of 100 yards per minute. Overfeed mechanism makes it possible to overfeed fabrics to pins in any percentage from minus 5% to plus 35% and have the cloth uniformly deposited. Available in vertical or horizontal type.

NYLON SETTING



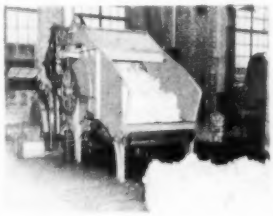
Equipment consists of two housings (enclosing a single wide tenter frame). First is a steam heated dryer for removing all moisture from fabric. Second is gas heated, high temperature housing providing temperatures in the 400 degree F. range and uniformity of air application to the fabric to provide *uniform stabilization across the full width of fabric*. By utilizing high velocity hot air, efficient heat transfer is accomplished, permitting stabilization of fabric under 1% residual shrinkage. Uniform setting eliminates shading of dyestuffs. Standard equipment accommodates either 130" or 144" wide tenter frame; but may be designed for use with 160" wide frame.

OPEN WIDTH STEAMER



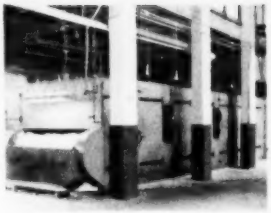
Proctor-Mathieson equipment accomplishes open width bleaching as a continuous process, eliminating both packing and roping of fabrics. Material is handled in the open width, employing the conveyor system, lessening danger of chafe and rope marks and distortions of fibers which result in defects in dyeing. Allows for reduced bleaching time and continuous range operation. Depending upon mill requirements, steamer is designed with one, two or three conveyors. Temperature controls and safety devices insure uniform results and automatic operation. Interior stainless steel construction prevents corrosion and gives long life.

CONTINUOUS EXTRACTING UNIT



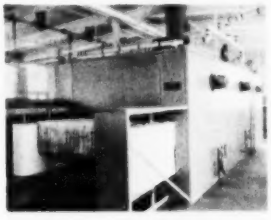
Economical, efficient . . . removes excess moisture from dyed, washed or bleached stock before drying. Automatic feed delivers uniform layer of wet stock into the nip of the squeeze rolls so as to prevent droppage of stock or bunching of material as it goes between rolls. Reduces time loss to virtually nothing and maintains constant production with minimum operating costs. Users report better opening of matted stock resulting in elimination of damp spots from dried stock. Hopper may be loaded from either the floor or directly from a pit into which the dyed cheese has been dumped.

STOCK DRYERS



There are two basic types of Proctor conveyor dryers for stock . . . the super dryer and the impact dryer. The basic difference between the two is in the air circulation. In each air is circulated through the bed of stock on a continuously moving conveyor; but circulation in the impact dryer (illustrated) is of the impingement type providing shorter drying times and good uniformity of moisture content. Super dryer circulation is suited to finer fibers such as synthetics. Advantages of each depends upon individual output requirements and physical characteristics of stock. Analysis of individual mill needs reveals which is best suited.

YARN DRYERS

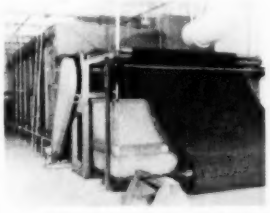


PACKAGE YARN dryers for cotton, rayon, synthetic yarns. Conditioned air, *regulated by dry and wet bulb temperature controls*, prevents dye migration and harsh spots in yarn.

TRUCK DRYERS FOR SKEINS AND CAKES. For throwing mills where capacities make huge automatic systems impractical. Wet and dry bulb controls with air movement makes possible uniform high quality drying with minimum steam and power needs.

AUTOMATIC SKEIN YARN DRYER (at left). For continuous operation. Traveling skein protector permits maximum loading of poles and insures air flow through skeins. For cotton, wool, silk or synthetic yarns.

CLOTH CARBONIZER



Continuous and automatic system for removal of vegetable matter from woolen and worsted cloth. Consists of acid saturating tank, squeeze rolls for extracting surplus acid, drying and final baking unit. Cloth is handled in the open width throughout the process. Cloth is carried over rollers through acid tank and between squeeze rolls, insuring thorough penetration. Carried in vertical passage over rolls, through drying unit, where it is dried to a bone dry condition. Finally, it goes through baker where carbonization is accomplished. System assures quality carbonizing, avoiding oil spots, rust marks, shading, tenter streaks. Saves time, space, labor.

EQUIPMENT FOR PRODUCING REDMANIZED* SHRUNK-TO-FIT FABRICS

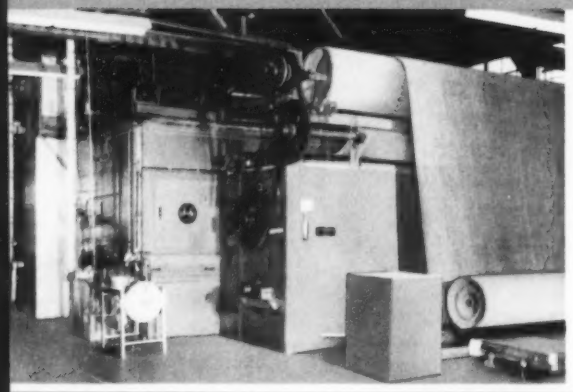
Ever since the basic concept of Redmanized* Shrunk-to-fit fabrics was first considered, Proctor engineers have worked on the development of the necessary equipment. Today we are working closely with Redman Process American Corporation, 320 Fifth Avenue, New York, N. Y., from which all licensing information must be obtained.

In wide commercial application the system for Redmanized* Fabrics is producing many types of tubular knit goods with residual shrinkages of 3% and less.

We have complete testing facilities available to demonstrate advantages of system to your satisfaction.

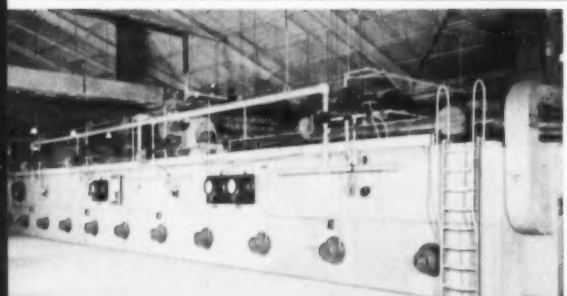
*Reg. U. S. Pat. Off.

PROCTOR DRYERS FOR CARPET



NEW LOOP DRYER *for dyed needle tufted carpets*

This dryer has been designed specifically for drying tufted carpets after dyeing. It provides maximum holding capacity per foot of dryer length. The dyeing and drying operation may take place either before or after carpet has received its latex or resin back coating. The loop dryer is the companion dryer to the float type described below. The combination of these two dryers provides complete drying facilities for the manufacturer of needle tufted carpet. Carpet is formed into loops over girts by a mechanical looping device. Heated air at high, uniform velocity is circulated down into the loops by fans located along both sides of the dryer. The dryer is built for any standard width of carpet. Heat source may be gas, oil or steam, depending upon individual mill requirements.



NEW FLOAT DRYER *for backsized needle tufted carpet*

This unique Proctor dryer is designed primarily for the drying and curing of wet latex or resin back coating applied to needle tufted carpet. The design is such that the carpet delivers to the dryer directly from the pick-up roll of the coating equipment and passes through the dryer, supported only by a cushion of high velocity air. The coated back of the carpet touches nothing until it is rolled up dry and cured at the delivery end of the dryer. A large diameter wood lagged spiked drum with a variable speed drive is furnished at the delivery end for pulling the carpet through the dryer. This machine may also be used for drying after piece dyeing. The dryer is built for any standard width of carpet. Heat source may be gas, oil or steam, depending upon individual mill requirements.

CONVEYOR DRYER *for carpets*

Used where maximum relaxation during drying is required or where individual rugs are handled. May be used for drying and curing and backsizing or latex—or for drying the carpet after dyeing. Carpet is carried through drying enclosure on a continuous conveyor which is of open mesh construction and may be 12′, 15′, or 19′. Gives full support to carpet and is open enough to permit ample air circulation to reach entire surface. It is driven by a variable speed to adjust to different kinds and weights of carpet. Heated air is circulated by high speed propeller type fans through ducts on both sides of carpet which is being conveyed through the dryer. Heat source may be steam, oil or gas to suit individual requirements. Direct connected motors are used throughout, eliminating belt and coupling maintenance. All-steel housing gives strength and efficient insulation. Interior is accessible for routine cleaning.

IMPINGE AIR DRYER *for backsized and face-treated carpets*

Used for drying carpets of all weights where back coating and anti-soiling treatment to the face of the carpet are employed. Carpets directly from sizing equipment are fed into dryer under controlled lineal tension. High velocity impingement air dries carpet quickly and uniformly. The size is set firmly and pile is raised to an open fluffy condition. Carpet is dried full width, insuring lasting flatness. Dryer is built in 12′, 15′ and 19′ widths—19′ machine is capable of handling two strands of 9′ carpet running side by side. Dryer may be installed on floor—or suspended from ceiling. Heat source may be steam, gas or oil. Direct connected motors are used throughout, eliminating belt and coupling maintenance. Interior can be reached easily for routine cleaning.

PROCTOR & SCHWARTZ · INC ·

PHILADELPHIA 20, PA.

DRYER SALES OFFICES:

Engineering Building,
205 W. Wacker Dr., Chicago, Ill.
422 Howard Bldg., Providence 3, R. I.
815 Johnston Bldg., Charlotte 2, N. C.

PROCTOR & SCHWARTZ · INC·

PROCTOR *Fiber Processing Machinery*

PROCTOR MACHINERY AVAILABLE FOR *EVERY* FIBER PROCESSING PROBLEM

Proctor processing machinery is available—and in use—for every conceivable type of fiber processing operation.

This extends over a wide range—from as rugged an operation as processing kenaf to carding fine synthetic fibers. It embraces opening and picking, automatic blending and conveying, carding and garnetting machinery.

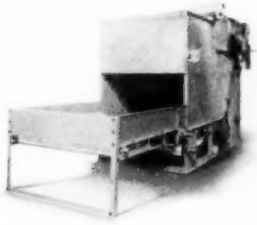
Proctor engineers association with textile fiber processing extends back over 70 years. During this time they have been responsible for virtually every major advance in machinery of this type.

Today—the accumulated experience and the comprehensive knowledge of textile fiber processing that is available at Proctor & Schwartz is unequalled anywhere else in the world.

When you have a fiber processing problem—the shortest way to the right solution is to call in Proctor engineers. They will bring to bear their vast experience and help speed your solution.

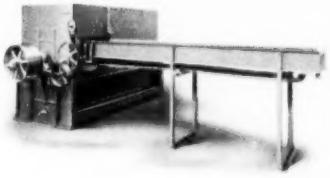
Some of the basic types of Proctor equipment are highlighted here—but remember fiber processing is no longer merely a matter of buying a piece of equipment. Let Proctor engineers review your requirements and show you how best to meet them.

PREPARATORY EQUIPMENT



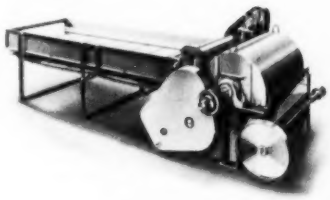
BALE BREAKERS

of Proctor design follow two general types: Models 490 and 650 for fleece wools and similar materials assure thorough opening and are widely used with opening and blending units. Model 513 is a high capacity unit for handling linters, cotton, staple fibers and similar materials.



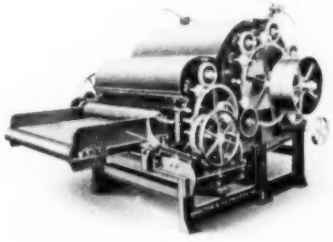
WILLOWS

for opening, cleaning and dusting are built in several types to suit various kinds of wool, cotton, asbestos, hair and other materials. Several Proctor models have picking sections built in to provide for preliminary picking which has been found beneficial in many cases.



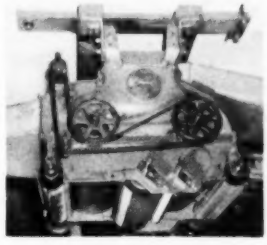
PICKERS

of Proctor design, equipped with hook type teeth, straight teeth, pin teeth in lags, or coarse garnett wire, are available for opening almost all types of materials. The Proctor Super Picker has made possible the handling of many jobs at production rates previously considered impossible . . . is backbone of many blending units.



SHREDDERS

for use in opening many kinds of new, as well as waste stocks. Many are used for wool, silk, and rayon waste before garnetting, instead of rag pickers formerly used. One of the most recent applications of this type is in an all-nylon reprocessing plant.



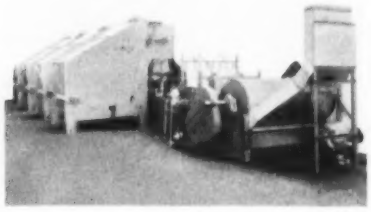
CONDENSERS

of single and double drum types, both usually equipped with perforated drums 18″ in diameter with a 36″ face, are in use in thousands of installations. Excellent separation of dust and air is obtained. Used behind willows, dusting machinery, pickers or other opening equipment in handling dirty or dusty stocks.

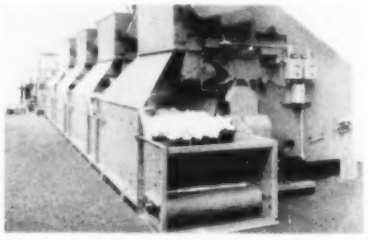
PROCTOR & SCHWARTZ · INC·

BLENDING SYSTEMS

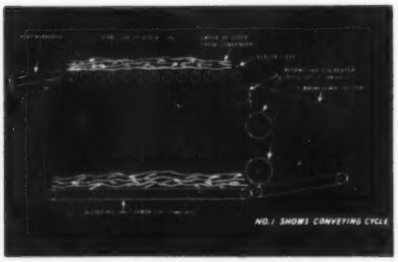
Proctor engineers, pioneers in the development of automatic blending equipment, are prepared to design a system to meet the specific needs of any size mill. It may be semi or entirely automatic. It may employ one picker which is fed by hand or be made up of several pickers, being fed by automatic weighing feeds with pickers discharging to a line of roller distributors set over blending boxes, all depending upon the mill's requirements.

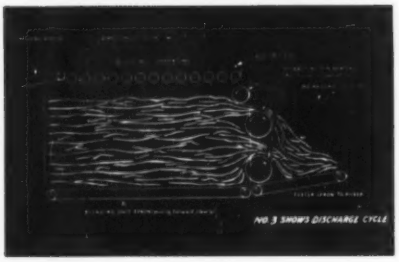


Semi automatic systems employ weighing feeds depositing predetermined amounts of different fibers on long picker apron.



This system employs accurate weighing feeds with skewing aprons over constantly moving long apron which feeds picker.

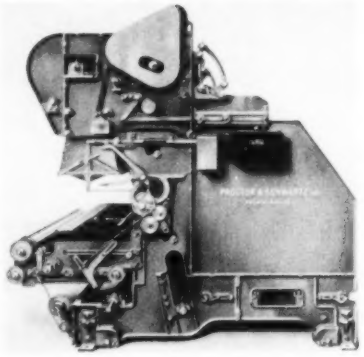




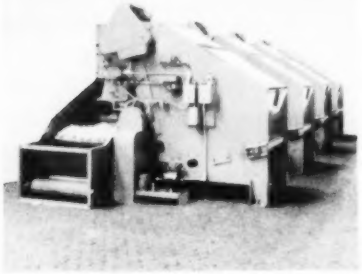
One of the most recent developments is this patented roller distributor principle. Stock coming from a ceiling condenser is dropped on an apron equipped with a spreading device. Stock is carried on the rollers, all turning in a forward direction. When layer of stock reaches the end, an electrical device causes every other roller to reverse momentarily, allowing the stock to drop between the rollers into the bin. After the bin is filled to the top, feeding in is stopped and the discharge cycle set in motion. By means of receding pin rollers the entire mass is broken down from top to bottom and is slowly discharged to the next operation. Roller distributors have wide application to many types of blending systems.

Typical installation built around a roller distributor. Stocks for blending are deposited on bale breaker feed apron for opening and feeding to picker. From picker, stocks travel to ceiling condenser, which deposits them on inclined apron for feeding to roller distributors. Roller distributors are located over first section of blending bin. When this half of bin is filled, a curtain which divides it from the second section is raised and the floor apron moves stock to second section. Retracting pin rolls discharge stock to cross apron which feeds a second picker. It may then be blown back to ceiling condenser for reblending—or carried directly to the card room.

AUTOMATIC FEEDS

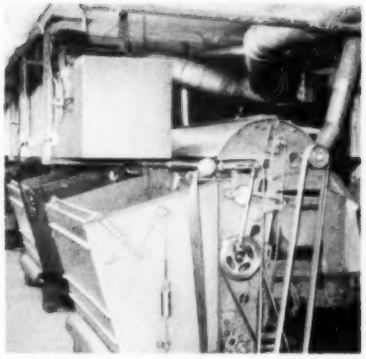


Proctor automatic weighing feeds for use with cards, garnetts or blending lines represent the most accurate type of weighing feed that it is possible to build. The large hopper of the weighing feed illustrated at the left is equipped with a bottom apron. The spiked apron is pinned to suit the type of stock to be used. The patented compensator mechanism keeps uniform the pressure of the stock against the spiked apron, regardless of how much is in the box. The eccentric comb evens the stock across the spike apron, and a retracting pin cylinder strips it off in small increments to go into the scale mechanism. The scale is of the balanced bottom type with the weight carried on the scale arm cut down about 75% from earlier models. A mercoid switch, which operates against the end of the scale arm, controls the motor drive for the spike apron and also the trap door directly over the scale pan. Illustrated below are Proctor automatic weighing feeds in use feeding a blending line.

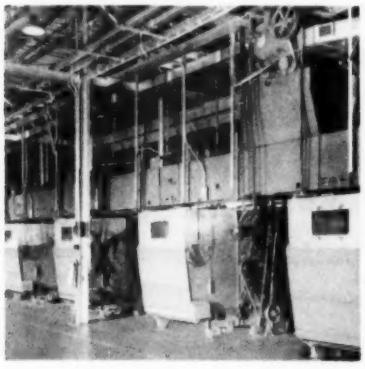


PROCTOR & SCHWARTZ · INC·

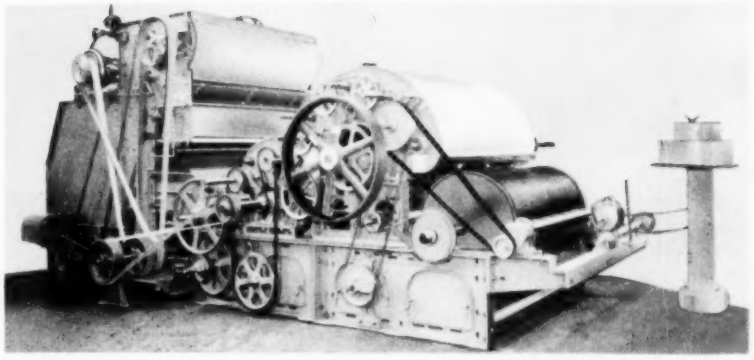
OVERHEAD CONVEYORS



Proctor designed automatic conveyors include simple one way conveyors, reversing conveyors with time-control and the patented, overlapping, reversing type illustrated. Conveyors of the type illustrated may be arranged to take stock coming from scouring lines, pickers, dusters, dryers and other machines through Proctor ceiling condensers. When used with a series of card or garnett feeders, these feeds are kept filled between 60% and 100% at all times continuously and automatically, through the use of feeler mechanisms on the feeds and reversible motor drives on the overhead conveyors. All of this is properly tied in with the motor drive on the supply lines to eliminate overflows. Similar systems with manual push button controls are used for putting stock into bins or for filling dye-kettles or other machinery units. Floor conveyors are also available for use with pit feeds or other machines for taking stock from any of several bins or piles and then into pickers or other units.



CARDING MACHINERY

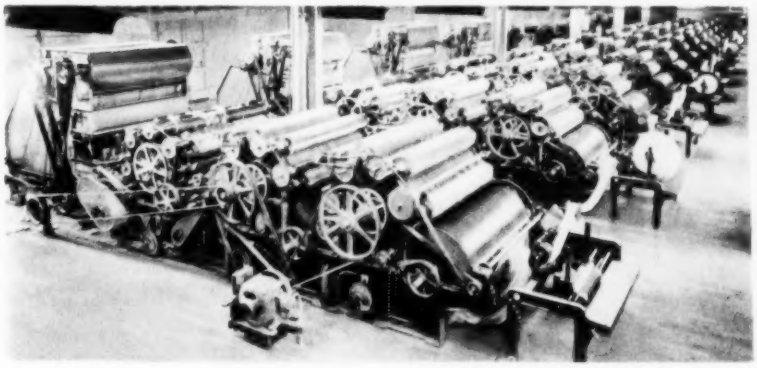


Proctor carding machinery of the new type covered with metallic wire offers many advantages for the carding of worsted wools, synthetic fibers and blends of all kinds. (Card shown above for synthetics.)

(Card shown below for worsted wools.) For carding worsted wools, the average production of these new cards has been double that of the older cards with flexible wire clothing. The noilage has usually been reduced and the yield of the finished, carded sliver increased substantially through the elimination of the stripping waste. Metallic wire does not hold any of the stock and the extra fiber goes into the sliver. At the same time, the metallic clothing eliminates the labor and the down time formerly required for stripping the waste out of the flexible clothing. Additional down time is saved through the elimination of the grinding operation as this has been cut out entirely.

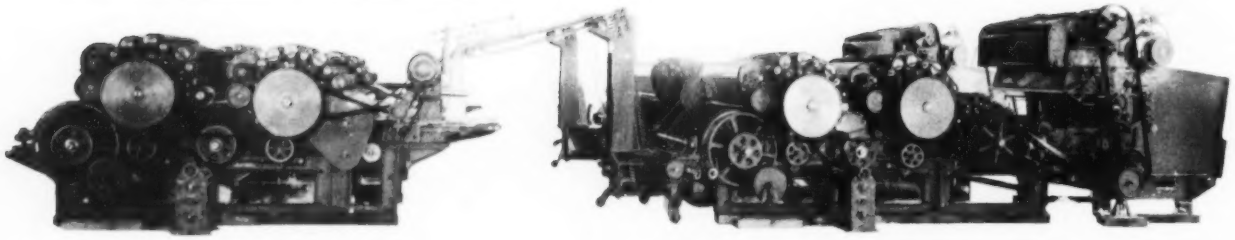
The new Proctor worsted card takes up less room, requires much less power, and gives far greater production in comparison with the older types of carding, thereby making possible tremendous savings.

During the past few years a great number of Proctor metallic cards have been installed for carding synthetic fibers, either entirely or in a blend with wool or other synthetics. The small card illustrated is used for making a straight synthetic sliver for combining through gilling and other operations with wool or other fibers. The latest development in synthetic carding is the Proctor duplex card which was designed especially for the carding of blends of fiber which are usually mixed together in a Proctor blending system. These materials are then carded, cross blended through the use of a special intermediate feeding system, carded again, and then delivered in a multiple end delivery arrangement. From this point the material is carried forward through gilling, drawing, roving and spinning to make an excellent yarn with the minimum number of operations.



WASTE MACHINERY

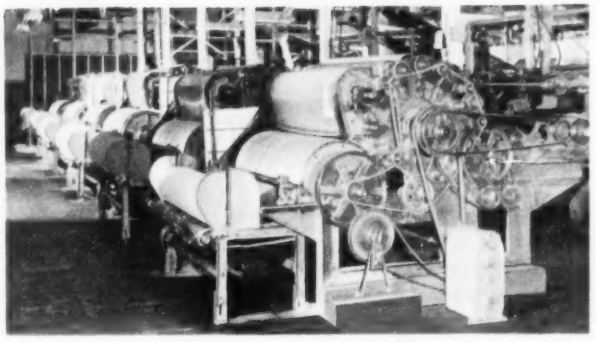
Proctor Duplex Garnett.



Proctor engineers have designed a very large percentage of all of the machinery that has been used for more than eighty years in plants which reduce worsted and woolen threads, clips and cuttings. In more recent years, a great deal of similar equipment has been built for the re-working of waste materials like rayon, nylon and other synthetics, as well as for blends of these materials.

Proctor has recently introduced to the waste trade an entirely new and revolutionary method of oiling and preparing woolen and other waste materials before going to the pickers. There is also now available high production picking equipment and new shredding machinery to follow the picker which together are giving outstanding results.

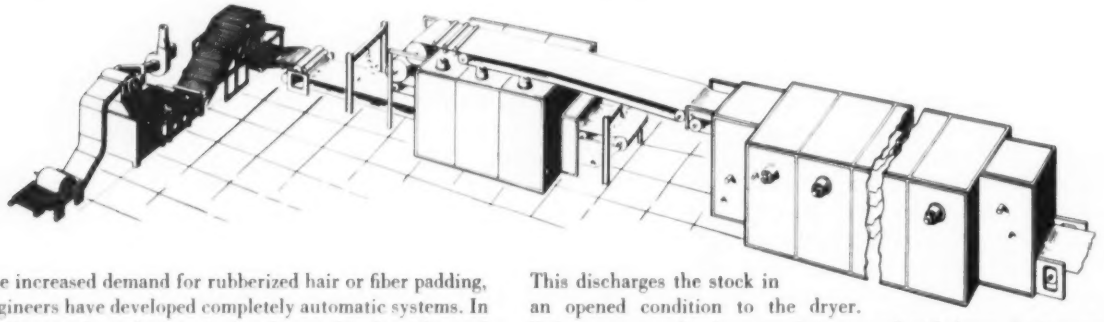
Proctor garnett machines are available in a wide range of sizes in both the single and the duplex type for handling all of the various range of waste materials. These machines, in combination with improved preparatory equipment and automatic conveying machinery that has been developed, are able to turn out tremendous quantities of re-worked fiber at greatly reduced cost.



Completely Proctor equipped Garnett room.

Proctor garnetts, pickers and shredders are also available for cotton waste, jute, hair, flax, asbestos and other fibers.

RUBBERIZED PADDING MACHINERY



To meet the increased demand for rubberized hair or fiber padding, Proctor engineers have developed completely automatic systems. In the system illustrated, stocks are mixed and opened in the picker and then transferred to the ceiling condenser. Cleaned stock is dropped into a feed hopper for even feeding to the hair card. After opening in the card, material is converted to a web and fed to the apron of the lapper where it is built up into layers of required depth on the floor conveyor. The batt is then carried to the hair spreader unit. This discharges the stock in an opened condition to the dryer. Before entering the dryer stock is sprayed with latex. As it passes through the dryer, the pad is turned allowing the opposite side to be sprayed. It is then compressed and passed to the vulcanizing unit—from which it is discharged ready for the cutting table. In addition to this system—Proctor engineers can arrange various combinations or units to meet the needs of any mill or type of stock being handled.

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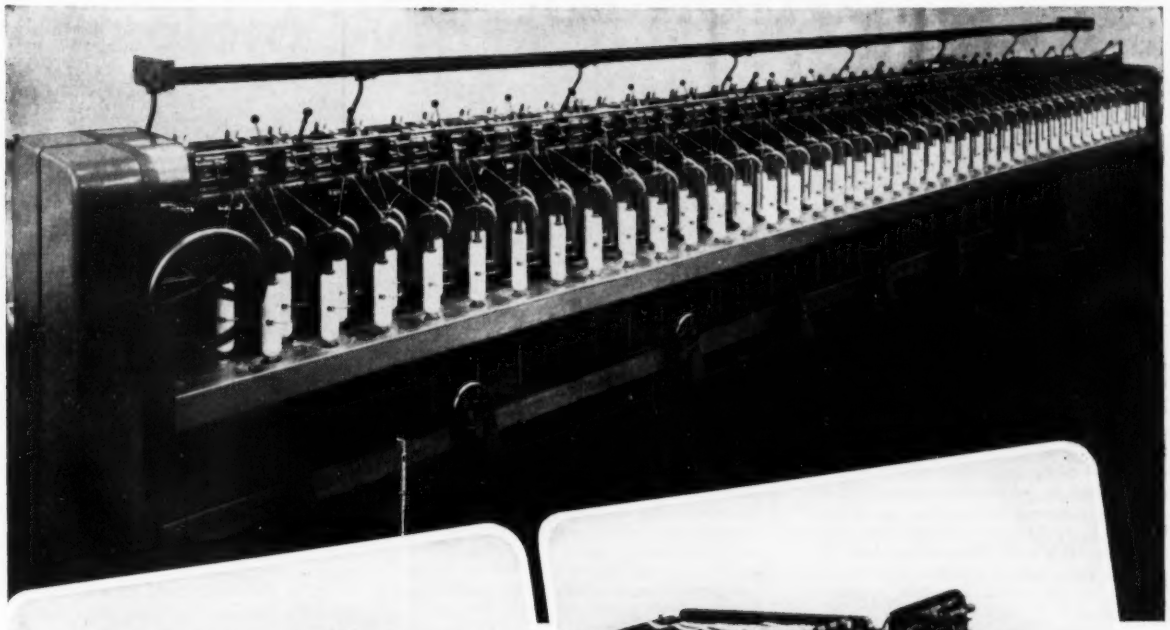

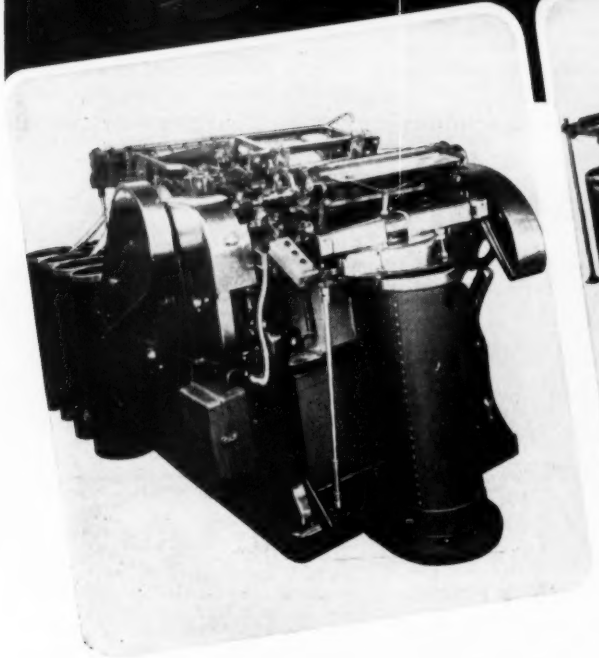

Above: Model BP Gill Flyer
Left: Rectilinear Comb for wool and synthetics
Right: Special Heavy Duty Gill Box

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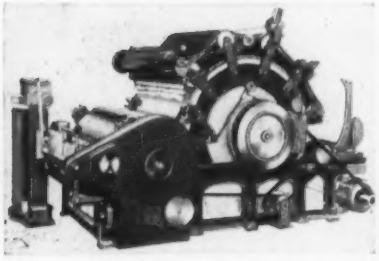
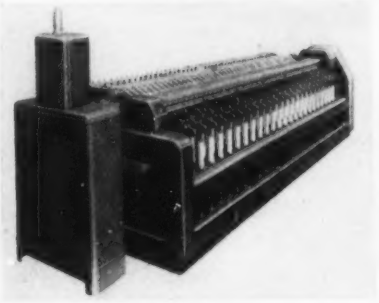
COTTON MACHINERY



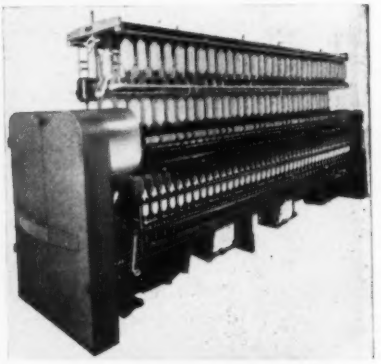
PLATT COTTON CARD

With Platt Revolving Flat Card, due to exceptionally strong cross-rail construction and rigid foundation, accurate settings are easy to obtain and hold, insuring the production of an even, nepless web for both light and heavy carding. Vibration is practically eliminated and air currents minimized. An independent motor drive does not increase the overall width of this well designed machine. Cut staple fibers can be worked very satisfactorily on this card. Standard widths of 40" or 45".



MS-2 High Draft Roving Frame

Newly designed and much quieter at higher speeds. Equipped with Cassablancas new 2 zone drafting system. Exceptional fiber control with drafts from 10 to 40. New Pneumastop broken end collector and electronic stop motion. Headstock is compact and allows easy access to gearing and twist change gears. Silent chain drive to spindle and bobbin shafts with helical cut gears to each independent spindle and bobbin.

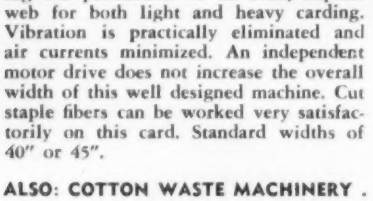


M-1 RING SPINNING FRAME

For packages up to 12" lift with 3" max. dia. rings at high speeds, in a choice of drafting arrangements. Simplified gearing combines flexibility and efficiency. Central lubrication oils while running. Roller bearing spindles. Combination building motion available, allows three types of build on the same frame by a simple adjustment.

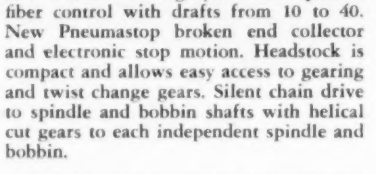
ALSO: COTTON WASTE MACHINERY . . . OPENING AND PICKING MACHINERY . . . COTTON & RAYON FANCY TWISTERS

WOOL MACHINERY



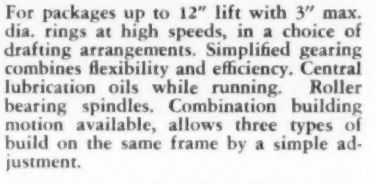
AXMINSTER CARPET LOOM

Simplest in operation and highest production loom of its type. Split shot method of inserting the foundation fabric weft gives high production and reduces costs. An unlimited number of shades can be woven into the carpet with an economy of tuft material. Looms available for fabrics from half a yard to four yards wide.



M.W.R.1 and M.W.R.2 Large Package Woolen Ring Frames

Entirely new machines designed specifically for 11" and 12" lifts with ring diameters from $3\frac{3}{4}$" to $5\frac{1}{2}$", enables all the inherent advantages and economies of large package spinning to be fully attained. Ideal for carpets, blankets and coarse tweeds, it produces a high quality yarn. Ease of operation and maintenance, accessibility and simplicity of adjustment are some of the features which will be appreciated by management and operative alike.



PLATT WOOLEN CARD

Variable speed drive to workers raises production by producing better roving with less fiber breakage. Speed of workers can be modified to suit any particular material, and permitting any desired combination of worker and doffer speeds to be used. Independent fancy drive allows varying speeds to suit different types of materials being processed. Electrically governed weighing mechanism prevents over-feeding because there is no time-lag as in mechanical arrangements. New tape condenser with multiple speed drive for rubbing motion has patented motor shaft drive adjustable from 200 to 600 r.p.m.

ALSO: CONTINENTAL, ENGLISH, SCOTCH AND AMERICAN CARDING SYSTEMS . . . WOOL OPENERS

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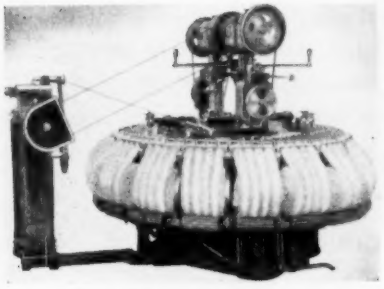
MAGNUM RING SPINNING FRAME

Combines the valuable features of a stationary ring rail spinning frame with the good points of a traversing ring rail type machine. It eliminates practically all the disadvantages of both, with the result that very large packages may be used with complete success. These packages may go up to eight ounces and cover counts up to 42's. The greater length on the bobbin allows for fewer doffings, consequently, higher efficiency of the machine and the operatives. Less frequent creeling in later winding operations is a valuable indirect benefit. This is a tested and well proven spinning frame which has demonstrated its ability in hundreds of mills to produce excellent quality worsted yarns at high speeds. Complete data on this and other Prince-Smith & Stells machines will be sent upon request.

PRINCE-SMITH & STELLS ALSO MAKE PREPARERS, BACKWASHERS, INTERSECTING GILLS, OPEN & CONE DRAWING FRAMES, CAP, FLIER & RING SPINNING & TWISTING FRAMES and P.S.C. SYSTEM SPINNING & TWISTING FRAMES.

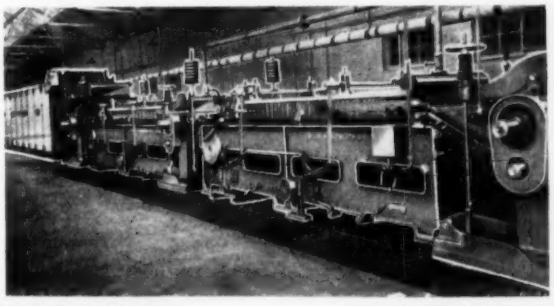


NOBLE COMB

This machine is the standard throughout the world for combing longer types of wool, synthetics and blends by reason of its simplicity, low cost of upkeep and productive capacity. P.S.B. Roller Stand puts equal pressure at each end of roll. Easy to replace aprons. Balanced dabbing motion reduces vibration. Circles for different fibers are interchangeable without disturbing gearing. New stop motion. New circle cleaner. The Perfect Feed Knife maintains uniform feeding conditions automatically and eliminates the human element. Latest data on blend combing sent upon request.

AXMINSTER WOOLEN TWISTER

Higher production of many woolen yarns can be expected of the new 4 Fold Ring Woolen Twister. Many improvements, from lowering the overall height of the entire machine to the use of Hoffman roller bearing spindles and ball bearing tension pulleys, increases spindles per operator and reduces maintenance time. Independent lifter motion for each side of machine for various runs and twists to be made simultaneously. Gearing easily accessible. Ball bearing change speed device permits quick alteration of spindle speeds.



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Harrow type action handles stock gently with very little agitation, delivering a clean wool. Built to highest engineering standards. World wide reputation for little maintenance.

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Tenters
Caustic washing systems for tenters
Horizontal washers with steam caustic eliminators (Pat. appld. for)
Mercerizing Ranges
Recuperators
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Vat Color Steam Dyeing Ranges
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Hot Flues, Booster Dryers and Tensionless Dryers
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Sulphur Dyeing Ranges

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Duplex Printing Attachments
Back Framing
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Dewey & Almy Blanket Washers and Dryers with back framing
Continuous Grey Drying Systems (Bromley Patent)
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Size Kettles
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Color Dippers
Laboratory Printing Machines
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FINISHING EQUIPMENT

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Special Equipment for boiling out, mercerizing and finishing drills and twills
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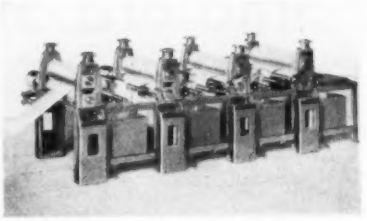
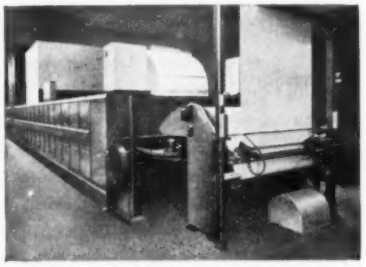
Pile fabric finishing machinery

ALSO a most complete line of LABORATORY MACHINES

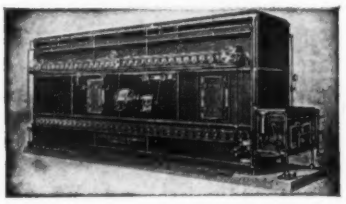


COMPARTMENT WASHER—Unit type construction. Can be furnished in any number of compartments, for range operation or independent use. Different weights of cloth can be run without "scrimping in" or damaging the cloth.



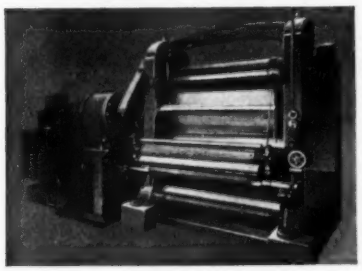
TENTERS—"Ripple-Flo" Tenter Range (illustrated) is designed for all-purpose drying, shrinkage control, resin finishes, water repellents and permanent finishes at a practical operating speed of 100 yards per minute. Overfeed is accurately controlled from 0 to 25%. Maintains selvage tolerance of 1/16th-inch (plus or minus) in relation to the pin line.

All lengths and widths in all types of tenters—straight automatic, vibratory, mercerizing, return.

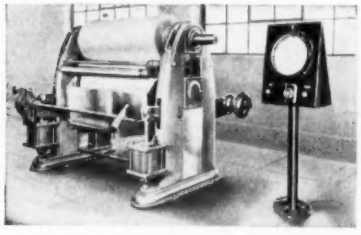


AGERS—all types and sizes. Modern in design and appearance, they embody the latest engineering perfections. All parts planed for fit. Outside roller bearings with Alemite lubrication insures smooth performance; a simple seal makes them steam tight; carrier rolls driven by sprockets and chain in a protective track. Main drive from motor and silent chain mounted on the Ager.

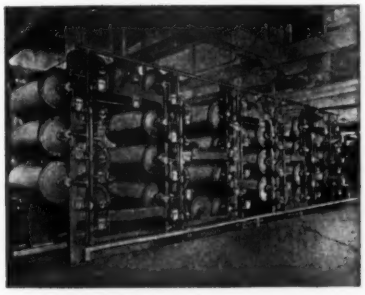
H. W. BUTTERWORTH & SONS CO.



CALENDERS—all types and sizes from light two-roll machines with lever pressure or micro-set to nine-roll hydraulic machines with micro-set. These include 2-Roll Embossing, 2-Roll Schreiner, 2-Roll Plain, 3-Roll Friction, 3-Roll Rayon—60 and 80 tons, 3-Roll Chasing, 4-Roll Plain and Hydraulic, 5-Roll Rolling and Chasing, 6-Roll Rolling and Chasing, 7-Roll Hydraulic.

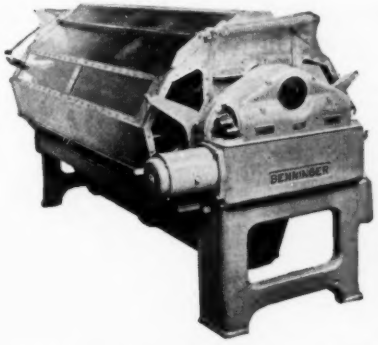


BULLET PADDERS . . . Streamlined, bullet-shaped frame is trim in appearance, compact in design, extremely functional in operation. Rolls are interchangeable from 12 to 20 inches in diameter. Makes tearing out frame unnecessary when converting rolls. No loss of operational time. Pressures can be varied from zero to 15 tons. Can be used on rayon, cotton or wool. Choice of 2-roll or 3-roll, light or heavy duty.

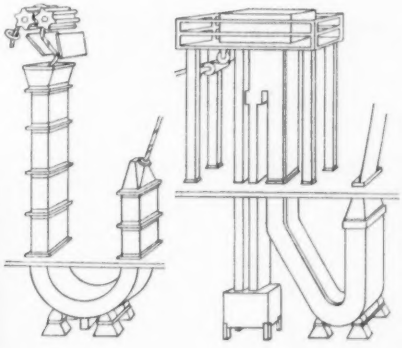


DRYING MACHINES—contain the latest improvements in design. Cylinders of special stainless steel with single welded precision-ground seams. Face dimensions up to 150 inches. Built with any required number of cylinders, in horizontal or vertical stacks.

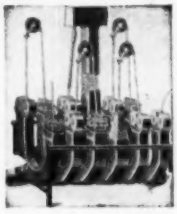
Drying Cylinders equipped with self-aligning roller-bearing housings and other features including Johnson Joints, strainers and traps controlling removal of condensate. Traps furnished according to preference of mill.



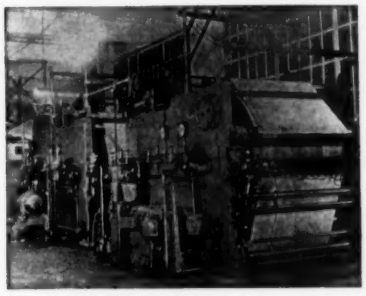
DYE JIG—Swiss-made Benninger Jig features automatic reversing and stopping device with self-acting passage counter. For use on cotton, silk or synthetic fibres, staple or mixed fabrics. Made in the following standard useful widths: 51¼", 63", 75".



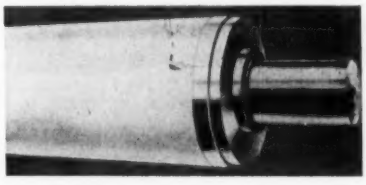
CONTINUOUS BLEACHING RANGES—for the DuPont or Becco Process. Rope or Open Width. Includes "J" Boxes, Washers, Caustic and Peroxide Saturators and Heater Tubes.



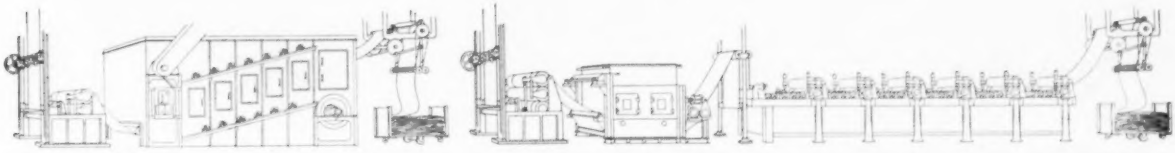
JUNIOR BLEACHING UNIT . . . Bleaches knit goods or cotton piece goods in an area 13 feet long and 16 feet wide. Handles cloth at average rate of 50 yards per minute. Single stage consists of Squeezer, "U" type Washers, Saturator and J-Box. The J-Box handles 300 to 600 lbs. of cloth per hour. Also built in 2-stage range.



COMPRESSIVE SHRINKER—the Butterworth Compressive Shrinker assures greater capacity on all weights of fabrics. Improved atomizers and vapor chamber; latest antifriction bearings. All improvements approved by Cluett-Peabody.



CALENDER ROLLS—We furnish new Rolls or refill your present Rolls . . . Special Cotton Rolls for heavy duty friction work. Special combination Rolls for Chasing Calenders. Standard combination Rolls for plain calendering. Special husk mix Rolls for water mangles. Wool felt Rolls for silk and embossing and schreiner work. Special cotton and wool Rolls for schreiner work.



CONTINUOUS DYEING RANGE—It takes only two pads, a hot flue dryer, a steamer and a compartment washer for a complete 2-stage range for both vat and sulphur colors. Also made for continuous operation fom pigment padder to dry cans.

CURTIS & MARBLE MACHINE CO.

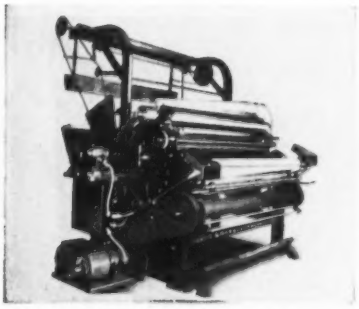
PREPARATORY MACHINERY FOR WOOLENS AND WORSTEDS;
CLOTH FINISHING MACHINERY FOR ALL FABRICS

Main Office and Works:
WORCESTER 3, MASSACHUSETTS

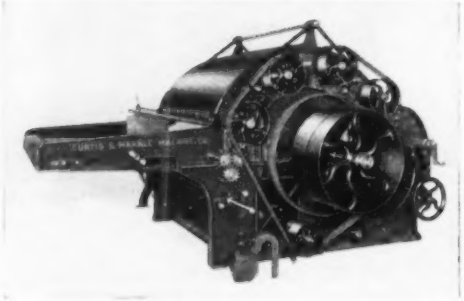
Southern Office: GREENVILLE, SOUTH CAROLINA

Manufacturers Since 1831

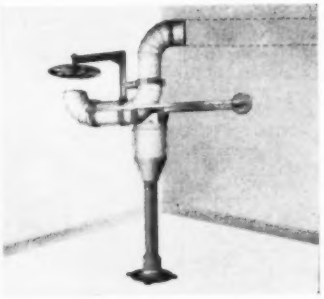
PREPARATORY AND FINISHING MACHINERY FOR WOOLEN, WORSTED, CARPET, FELT AND KNITTING MILLS. FINISHING MACHINERY FOR PILE FABRICS



HIGH SPEED WOOLEN SHEAR
New "Yankee Clipper" type—Variable speed motor drives and many other features.



FEARNAUGHT MIXING PICKER
New style light running steel and iron cylinders or wood covered cylinder. New style grates under cylinder.



TYPE M TRUSLOW BLENDER
(Patented)
Gives a superior blending of different colors, kinds or qualities of stock.

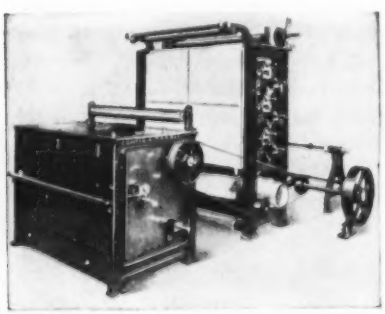
PREPARATORY MACHINERY FOR WOOL
- Automatic Wool Dusters
- Stock Blenders
- Goddard Burr Pickers
- Parkhurst Burr Pickers
- Fearnaught Mixing Pickers
- Atlas Mixing Pickers
- Rag or Shoddy Pickers

CARPET FINISHING MACHINERY
- Carpet Brushing Machines
- Carpet Rolling & Measuring Machines
- Carpet Sewing Machines
- Carpet Shearing Machines
- Carpet Sizing Machines

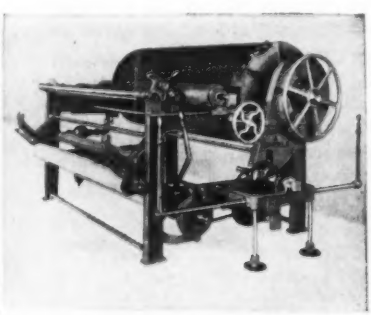
CORDUROY FINISHING MACHINERY
- Cross & Treadle Brushes
- Waxing Machines

PILE FABRIC MACHINERY
- Plush Brushing Machines, all kinds
- Plush Lustering Machines
- Plush Shearing Machines
- Plush Tigers, etc.

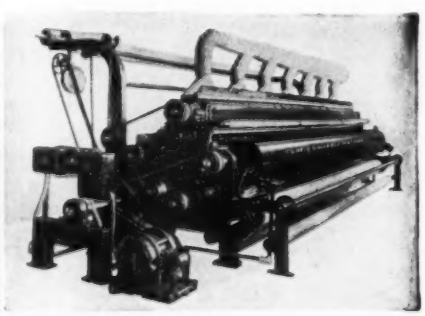
WOOLEN FINISHING MACHINERY
- Woolen & Worsted Brushing Machines
- Ceiling Folding Attachments
- Chinchilla Machines
- Dewing or Spraying Machines
- Doubling & Tacking Machines
- Vacuum Extractors
- Gigging Machines
- Inspecting Perches
- Mantle Steaming & Air Cooling Machines
- Open Decating Machines
- Steam Sponging Machines
- Measuring Machines, cloth
- Rotary Presses
- Sanding & Polishing Machines
- Sewing Machines
- Shearing Machines
- Spraying Machines
- Spreading and Rolling Machines
- Steam Finishing Machines
- Winding Machines, cloth



STARCHING or DUSTING MACHINE
(With Vertical Brusher)
For applying starch, talc, etc. to rubberized or other coated fabrics.



MANTLE STEAMING OR OPEN DECATING MACHINE
Made with either one or two 36" or 24" diameter cylinders.



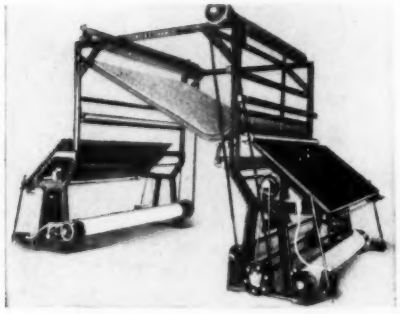
24/4 OR 18 FOOT SINGLE CUTTER CARPET SHEAR
With Push Button Control to raise and lower cutting parts, and to stop, start and reverse carpeting.

CURTIS & MARBLE MACHINE CO.

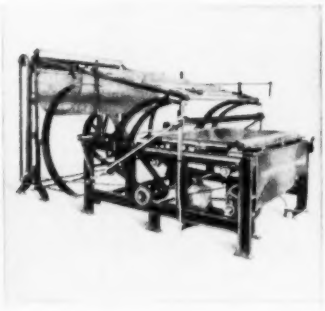
PREPARATORY MACHINERY FOR WOOLENS AND WORSTEDS;
CLOTH FINISHING MACHINERY FOR ALL FABRICS

Main Office and Works:
WORCESTER 3, MASSACHUSETTS
Southern Office: GREENVILLE, SOUTH CAROLINA
Manufacturers Since 1831

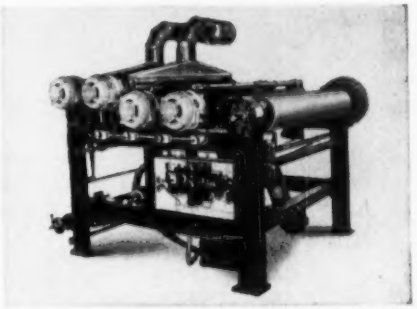
A COMPLETE LINE OF CLOTH ROOM AND PACKAGING MACHINERY FOR COTTONS, RAYONS, SILKS, ETC. (Including Elliot & Hall Folders or Hookers)



TANDEM INSPECTING MACHINE
(With Patented Electronic Control)
For inspecting goods too broad for one operator to watch the entire width.



BALL-BEARING CLOTH FOLDER
With Lewis Pneumatic Table Lift and Motor Drive. Auto-Stop Motion available. Other styles for different fabrics.



TYPE CMR SHEARING MACHINE
(With Patented Seam Protector)
For removing selvedge and surface threads from cottons, silks, and rayons. Individual built in motor-driven revolvers.

CLOTH ROOM AND PACKAGING MACHINERY FOR COTTONS, ETC.

- Automatic Cotton Shearing Machines
- Cotton Brushing Machines
- Calendar Rolling Machines
- Double Doubling Machines
- Doubling & Winding Machines
- Curtis & Marble Folding Machines
- Elliot & Hall Folders or Hookers
- Coolidge Automatic Guiders
- Automatic Guiders
- Electronic Controls for Inspectors
- Inspecting Machines
- Loop Cutting Machines
- Measuring Attachments
- Rolling Machines
- Cloth Scrays & Cradles
- Selvage-Loop Cutting Machines
- Sewing Machines, Rotary or Railway
- Type CMR Cotton Shearing Machines
- Shearing Machines for Float Threads
- Singeing Machines
- Spreader Rolls
- Stamping Machines
- Trade Marking Machines
- Unrolling Frames
- Vertical Brushers
- Winding & Measuring Machines

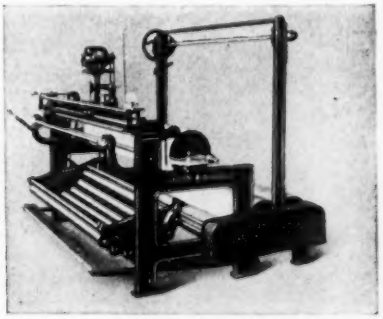
SILK & RAYON MACHINERY

- Duplex Sewing and Winding Machines
- Silk or Rayon Inspecting Machines
- Silk Folding Machines
- Silk Shearing or "Picking" Machines

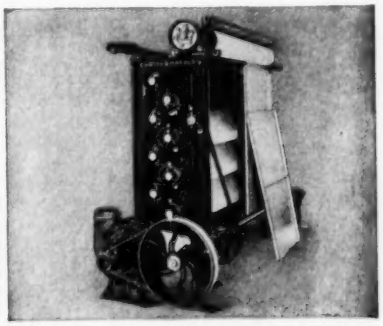
MACHINERY FOR FELTS

- Felt Shearing Machines
- Endless Felts Gigs
- Screw Carriage Frames & Dryers for Endless Felts
- Flock Cutting Machinery
- Cordage Clipping Machines
- Bag Folding Machines

THREE WAY SCRAY
With motor driven draft roll, Railway Sewing Machine and Cloth Cradle. Multiple Scrays are used to save floor space.



No. 55 DS RAILWAY SEWING & ROLLING MACHINE
For making up very hard rolls of cloth. Built especially for gauze and other light goods.



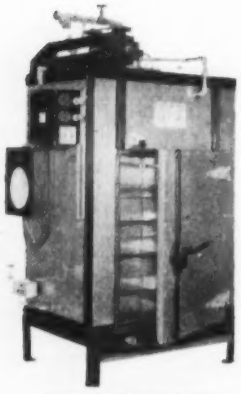
EIGHT ROLL VERTICAL BRUSHER
Quick Adjustment for regulating contacts of cleaning rolls is often supplied. Many other sizes and styles of Brushers.

LYDON BROTHERS, INC. » »

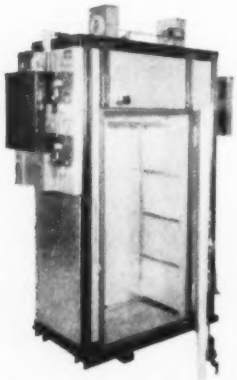
85 ZABRISKIE ST.
HACKENSACK, N. J.

CABLE ADDRESS: LYDON HACKENSACK

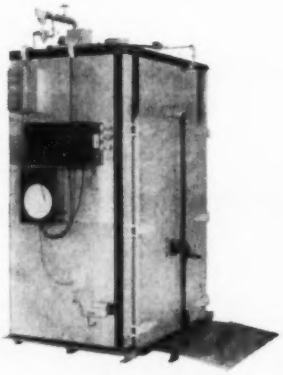
Conditioners • Twist Setters • Pre-Setters • Dryers
For the Textile Industry



STEAM OPERATED
CABINET TYPE
CONDITIONER



ELECTRICALLY OPERATED
PRE-SETTER FOR
NYLON HOSIERY



STEAM HEATED
TRUCK LOADED
TWIST SETTER

COMPLETELY AUTOMATIC TWIST SETTERS & CONDITIONERS FOR SILK, RAYON, NYLON & PRE-SETTERS FOR NYLON HOSIERY.

The Twist Setting & Conditioning Equipment illustrated combines the following important features:

1. Positive, accurate, dependable temperature and humidity control.
2. Evenly distributed and vigorous cross flow vapor circulation.
3. Interior of clean, bright stainless steel.
4. Exterior of aluminum coated sheet steel, stainless steel optional.
5. Efficient Fibre glass insulation.
6. Fast heating by vigorous vapor circulation and adequate heater capacity.
7. Completely automatic time cycle control.
8. Exhausting system as an optional feature.

These modern stream lined Twist Setters and Conditioners enable the operator to:

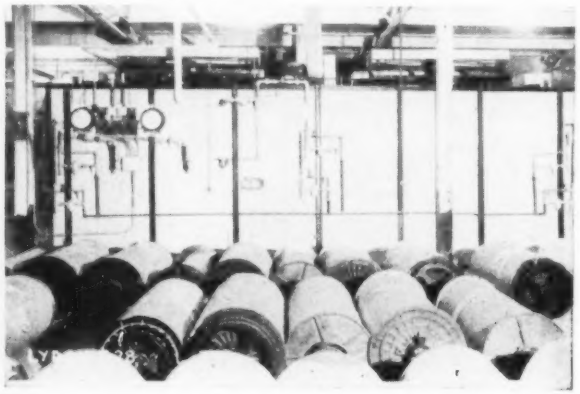
A. Preheat his material for a desired interval at a precisely controlled temperature.

B. Humidify his goods for a predetermined time at an accurately regulated humidity.

C. Exhaust humidity from the chamber at the end of the humidification cycle.

D. Where desired, to dry the material inside the chamber for a predetermined interval.

E. Circulate cool air through the material before unloading the conditioner.



Two Double Compartment Rayon Cake Dryers, Each Compartment Separately Operated & Controlled with Doors at Both Ends for Straight Through Production.

BETTER SPINNING

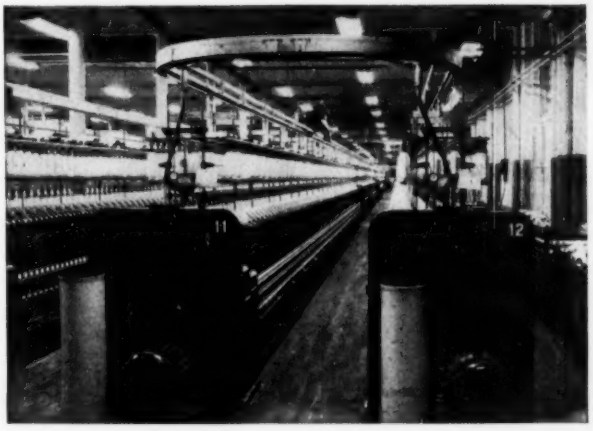
Through better machines made by

Rieter

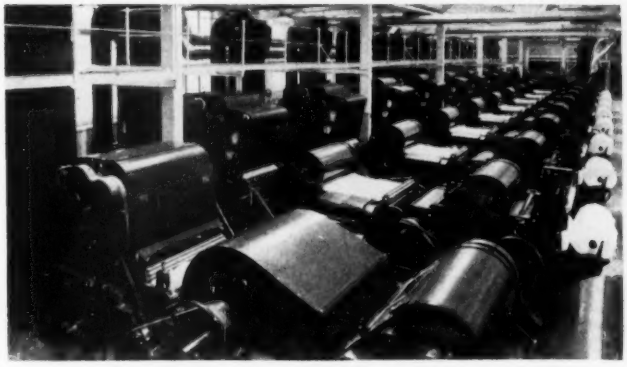
Established 1795

Rieter machines operate with
Absolute reliability
Maximum efficiency
and least possible wear

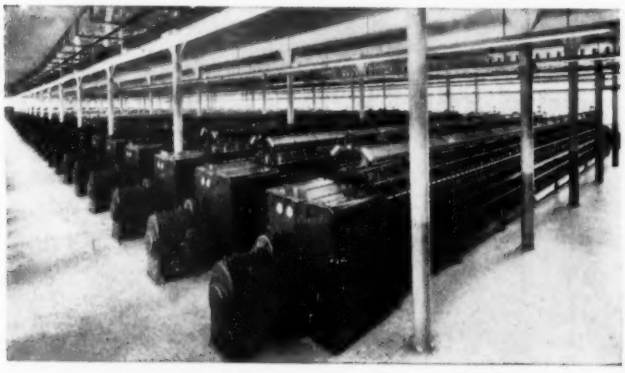
THEREFORE RIETER MACHINERY IS USED BY LEADING MILLS IN EVERY TEXTILE CENTER THROUGHOUT THE WORLD FOR OPENING, CARDING, SPINNING AND DOUBLING.



Rieter spinning frames with constant balloon and pneumatic pressure to top rolls in a Canadian Mill



Double beater scutchers with automatic hopper feeders and automatic lap changers in a French Mill



Ring spinning frames for worsted yarns in an Italian Mill

MODERN TEXTILE MACHINERY

from Bale Opener to Twisting Frame for Cotton, Wool, artificial and synthetic Fibres

SPECIAL DESIGNS for LONG STAPLES

Expert advice on reorganization of mills without obligation.

Projects and estimates for new plants.

Modification of Mills for working on the predetermined length system.

Conversions to shortened spinning methods.

Spare parts and service available in Arlington, New Jersey.

Rieter

Winterthur, Switzerland

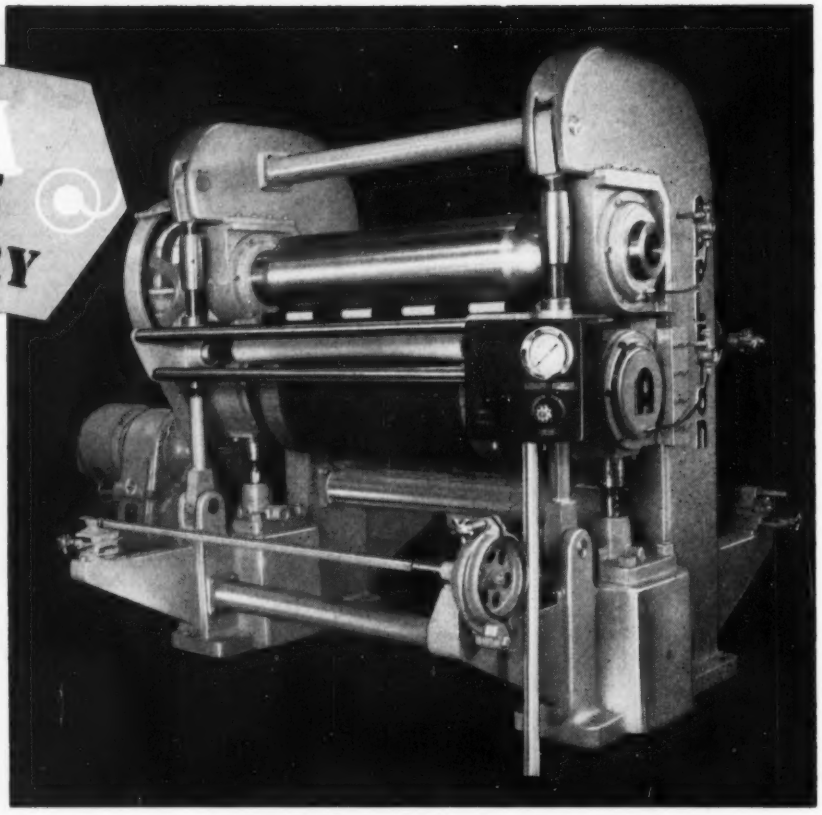
Synonymous to Precision

United States and Canada: **AMERICAN RIETER COMPANY, INC., Arlington, N. J.**

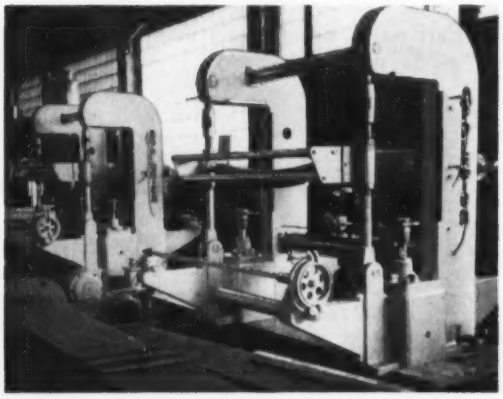
Canadian Representative: FAWCETT & COMPANY, TORONTO 3, ONTARIO
Southern Representative: BELTON C. PLOWDEN COMPANY, GRIFFIN, GEORGIA

THE to TEXTILE INDUSTRY

APPLETON TWO-ROLL 50-TON HYDRAULIC SCHREINER CALENDER



Designed for maximum production and minimum maintenance, this Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender is particularly well adapted for "Everglaze" schreiner work. Both rolls are mounted in anti-friction bearings, with force feed oil lubrication. A gas burner, water-cooled cylinder, and a variable speed motor to operate on A. C. current are other salient features. Some of America's finest textile machinery is made by Appleton . . . invite us in to discuss your requirements . . . a call or a card will bring our representative, at no obligation, of course.



Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender Under Construction

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF PULP, PAPER AND TEXTILE MILL MACHINES

From Bale Opener to Dryer

SARGENT PREPARATORY EQUIPMENT

ANY FIBRE • ANY BLEND

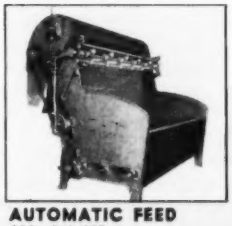
For those important first steps in textile manufacturing . . . opening, blending, picking, washing, extracting, drying. It's in these first steps that the quality of the fibre is set for all time. And here, too, is established the behavior pattern for drawing, carding, spinning, weaving.

Designed to combine maximum work-loads with careful fibre handling.

The SARGENT line starts the fibres RIGHT!

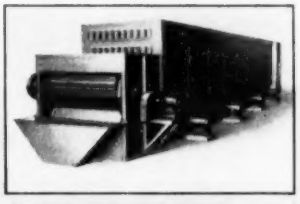
Leading mill men know this fact and rely on SARGENT Preparatory Equipment to make their work easier.

May we help *you* streamline your fibre processing? Just write your nearest SARGENT representative, or write us direct.



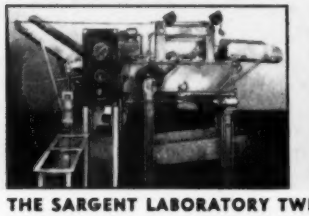
AUTOMATIC FEED (Model N)

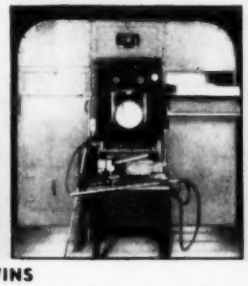
Hopper type . . . continuous, automatic . . . compactly designed to conserve floor area . . . high production . . . thorough stripping action . . . easily adjustable evener comb, either rotary or oscillating.



CONTRA-FLOW DRYER

Counter-air-flow principle provides highly economical, rapid drying of all fibres . . . continuous, automatic, high production unit . . . very low steam consumption.



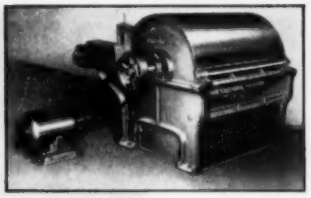


THE SARGENT LABORATORY TWINS

Junior size laboratory models of SARGENT'S Washer and Dryer to help you determine the one best way to set up your production line without muss, fuss or bother of interrupting plant work.

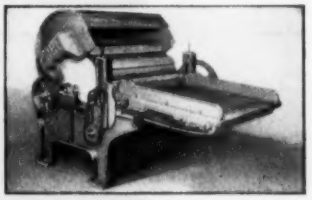
MIXING PICKER (Heavy Duty)

Beautifully adapted to continuous blending systems . . . single or double pairs of feed rolls, adjustable nip, variable speed drives.



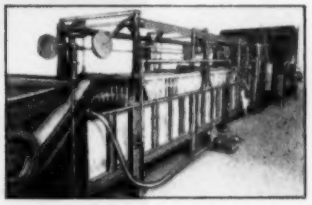
WET and DRY PICKER

As efficient for opening and picking synthetic staple as it is for wet cotton prior to drying . . . widths 18 to 72 inches.



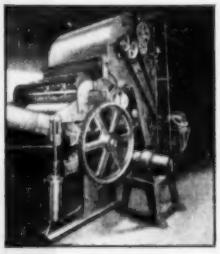
STAINLESS STEEL WASHER

Acid resistant, stainless steel throughout . . . ideal for scouring, bleaching, acidifying . . . the finest, most modern, of all washers.



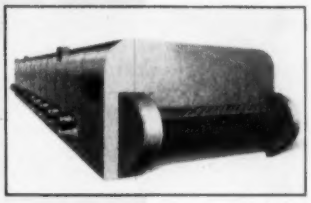
EXTRACTOR

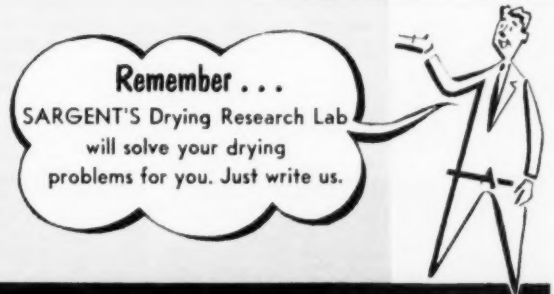
Sargent-designed pneumatic squeeze rolls adjustable up to 10 tons pressure . . . completely automatic, continuous production . . . full controls standard equipment.



STOCK DRYER

Leader in conventional down-draft drying . . . remarkably compact, takes little floor space, yet has unusually high-per-hour production.





C. G. SARGENT'S SONS CORP.

Graniteville, SINCE 1853 Massachusetts

REPRESENTATIVES: F. E. WASSON, 519 Murdock Rd., Philadelphia 19, Pa.
A. L. MERRIFIELD, 215 Grove Ave., Cincinnati 15, Ohio
W. S. ANDERSON, Carolina Specialty Co., Charlotte, N. C.
HUGH WILLIAMS & CO., 47 Colborne St., Toronto 1, Canada

FOSTER MACHINE COMPANY

WESTFIELD, MASS., U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C.

Canadian Representative—Ross Whitehead & Co., Limited, 1475 Mountain St., Montreal, Que.

European Representative—Muschamp Taylor, Ltd., Ashton-Under-Lyne, England

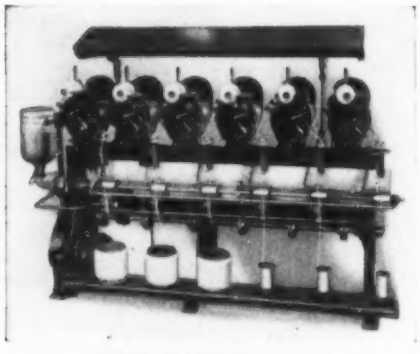
MODEL 102 HIGH SPEED WINDER

MODEL 102 WINDER

Suitable for winding all types and counts of staple yarns. Can be equipped to produce open wind knitting cones, warping cones, parallel tubes or dye packages with traverses up to 7 inches. The tube or cheese winder can wind up to 600 and the cone winder up to 750 y.p.m., giving about twice the production of obsolete machines with 1/3 less labor. Flexibility or adaptability to changing requirements is an outstanding feature. With simple changes it will wind any standard taper cone, any angle of wind from 9° to 18°, package dyed yarns, even if damp, or conditioned yarn. Conditioning attachment is optional while self-threading tension and slub catching attachments, double empty bobbin conveyors, steel top creels and steel side boxes are standard equipment. Made with 10 to 120 spindles per machine. Bulletin A-95 on request.

MODEL 75 WINDER

Suitable for precision winding of all types of filament yarns and cotton thread yarns. Will produce straight edge cones or parallel tubes with traverses up to 6", or pineapple cones by means of a special attachment. Spindle speeds up to 1500 r.p.m. Slow starting device—Foster-Zenith Yarn Cleaner—automatic stop motion—straight-line yarn oiling attachment—guideway balance spring—totally enclosed lubricated parts. Ball bearings on spindles and drive shaft. Individual spindle drives with 180° angle wrap around spindle pulleys. Only 2 H.P. motor for 36 spindle machine. Rigid construction and wide angle oversized cams reduce vibration and upkeep. Six spindles to a section; up to eight sections per machine. Bulletin A-92-A on request.



MODEL 75 PRECISE WINDER

MODEL 57 DOUBLER

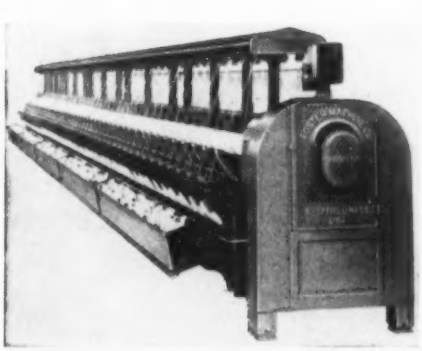
For winding two or more ends parallel on 6" or 7" tubes (from bobbins or cones) as a supply for twisting—any type and count (except the coarsest) of staple yarn and combinations of staple and filament yarns. Winding speeds up to 400 y.p.m. Ball bearing shaft—V belt drive—self-threading, spring suspended tensions—slub catchers for single process doubling, adjustable individually or as a group—quick acting stop motion—conveniently located starting handle—quick and easy threading and doffing. Makes possible a round ply yarn free from corkscrews and rough places, eliminates dropped ply and reduces time required for creeling twisters. 20 to 120 spindles per machine. Bulletin A-96 on request.

MODEL 56 DOUBLER

Similar to Model 57 machine but designed for doubling coarser counts. Doubles or folds 2 to 6 ends up drawing from bobbins or cones and produces an 8" traverse, 10" diameter package, containing approximately 10 lbs. of yarn. Winding speeds up to 350 y.p.m.

MODEL 76 SIZING MACHINE

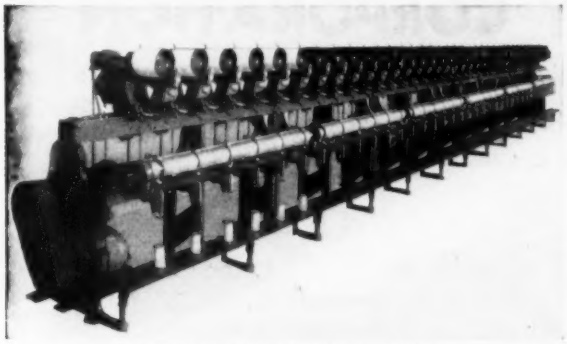
The original machine for sizing nylon yarn. Produces a barrel wind package on a 6" dia. Bakelite tube. This package assures even drying and easy give-off. Spindle speeds up to 2500 r.p.m Ball bearing spindles and drive shaft—slow traversing sizing rolls—change gears for regulating percentage of size—anti-wear tension and guide parts—stainless steel troughs and rolls. Built 6 spindles to section—up to 7 sections per machine. Bulletin A-97 on request.



MODEL 57 DOUBLER

MODEL 78 WINDER

For precision winding of tire cord, or coarse cotton or wool yarns from bobbins or skeins to tubes or cones with 6" to 10" traverse and weighing up to 28 lbs. each. Ball bearing spindles, individually motor driven. 1¼ h.p. for 5-spindle Machine. Push-button, electronically controlled slow start and spindle brake. Adjustable belt gainer. Easily positioned, single weight adjusting pressure and pressure release mechanism. Positive size stop, using long-life mercury switch. Guideways mounted on roller bearings. Individually serviced heads. Expansion-type tube and cone holders permit quick doffing and donning. Bulletin A-98 on request.



MODEL 76 NYLON SIZING MACHINE

FOSTER-MUSCHAMP AUTOFILL WINDER

For the fully automatic winding of all types of staple and filament yarns to shuttle bobbins. Winding speeds up to 6,000 r.p.m. Yarn layer locking device prevents sloughing. Adjustable automatic bunch builder. Mechanical diameter control eliminates broken filaments. Constant spindle speed—positive drive. Built in sections of four spindles—precision made—strongly built—simple mechanism—easy maintenance. Bulletin M-1 on request.

FOSTER-MUSCHAMP FILLWINDER

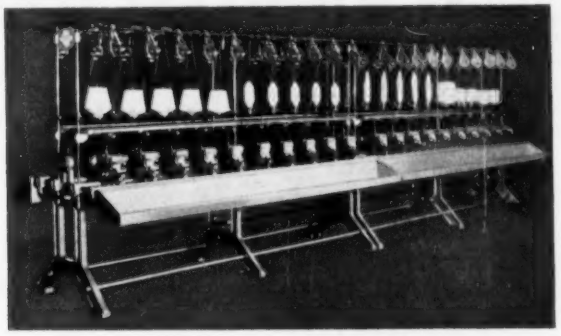
For non-automatic winding of all types of staple and filament yarns to shuttle bobbins. 6" to 9¼" bobbins. Five different traverses from 1 3/16" to 2". Diameters of bobbins from ⅝" to 1⅝" on standard machine. Winding or crossing ratio adjustable for 5½, 7, 11 or 22 wind. Bobbin building by feeder wheel and screwed traverse bar method. Base forming attachment, length and yarn breakage stop motions and bunch builder (if specified). Spindle or spindleless mounting. Spindle runs in self-oiling bearings at front and ball bearings at rear. Traverse bar carried in self-oiling bearings and passes through oil trapping cavity inside the box. Unit completely leakproof. One machine includes 20 winding units—10 on each side. 1 h.p. motor with double V-belt drive. Choice of 3 ranges of speed:—2,000, 2,500 and 3,000 r.p.m.; 3,000, 3,700 and 4,500 r.p.m.; 4,000, 5,000 and 6,000 r.p.m. Flat endless belt drives 20 spindles and slow start is obtained by jockey pulley. Bulletin M-2 on request.

FOSTER-MUSCHAMP AUTO-BRAID

A fully automatic high speed braider bobbin winder. Spindle speeds up to 5,000 r.p.m. for parallel wound braider or similar bobbins. Traverse length read and adjusted by visual scale fitted on side of spindle box. Choice of 4 cams for traverse lengths from 13/16" to 5½". Normally equipped for single end winding, but can be equipped for winding four or more ends. Quick-acting stop motion. Yarn measuring device. Magazine easily adjustable—holds 20 average size bobbins. Maximum package diameter, 2".

FOSTER-MUSCHAMP SUPERFILL WINDER

For winding super cops (up to 1 9/16" dia. and 10" long) of cotton, linen, spun rayon and jute—fine and coarse counts. A winding speed of over 500 ft. per minute and ease of operation assure high production. Rugged, direct-driven, slow-starting single spindle units are oil-tight and dust-proof. Automatic stop motions for thread breakage and full cops. Constant tension. Small space. Low power consumption. 10 spindles to a section. Bulletin M-3 on request.



FOSTER-MUSCHAMP AUTOQUILL WINDER

FOSTER-MUSCHAMP AUTOQUILL

A versatile fully automatic machine for winding any type of yarn on quills—with straight or oblique sides. Can be equipped for winding four or more ends at speeds up to 2,500 r.p.m. for quill or winding spools and up to 5,000 r.p.m. for parallel wound bobbins. Choice of 4 cams for traverse lengths from 13/16" to 5½", which are adjustable by visual scale. Adjustable taper end mechanism. Yarn measuring device. Adjustable magazine holds 40 average size quills. Quick-acting stop motion. All-steel construction.

FOSTER-MUSCHAMP AUTO-THREAD

For precision winding of all sizes of sewing thread spools with high production—low maintenance. Fully automatic. Normally equipped for single end winding—chromium plated gate tensions. According to wind arrangement, spindle speeds up to 3,500 r.p.m. are attainable. Can be equipped with visual scale for traverse adjustment and reading. Four cams for traverses from 13/16" to 5½" quickly and easily changed. Yarn measuring device. Adjustable for full range of sizes, magazine holds 30 average size tubes. Maximum package diameter, 2 in.

OTHER FOSTER EQUIPMENT

MODEL 40 PRECISE WINDER—for winding 30/2 to 8/40 to cones or tubes up to 6" traverse. Optional equipment includes ball bearing spindles and multiple end winding accessories. Six spindles to section. Up to 6 sections per machine.

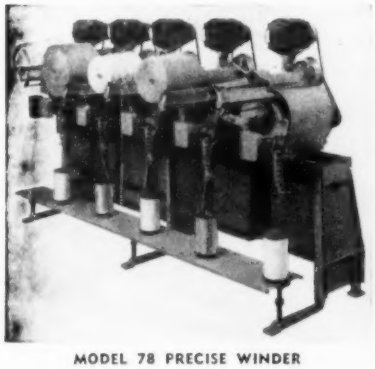
MODEL 77 PRECISE WINDER—for winding 8/3 to 8/100 to cones or tubes up to 8" traverse. Ball bearing spindles and drive shaft. Equipment for overend or unrolling supply. Six spindles per section. Up to six sections per machine.

MODEL 24 WINDER—for winding tire cord or other coarse count yarn to 10" traverse open wind cones. Special equipment for rayon cord.

MODEL 35A WINDER—for winding coarser yarns to 8" traverse knitting cones.

MODEL 12A WINDER—for winding wool, worsted or cotton yarns from skeins to cones or tubes.

MAGAZINE CONE WARP CREEL—for high speed beaming, ball warping or jack spooling of all types of yarns. Built to hold 6", 7" or 8" traverse wood or paper cones. Electric stop motion, if desired.



MODEL 78 PRECISE WINDER

FOSTER-MUSCHAMP AUTOFILL WINDER

FOSTER-MUSCHAMP FILLWINDER

McKIERNAN-TERRY CORPORATION

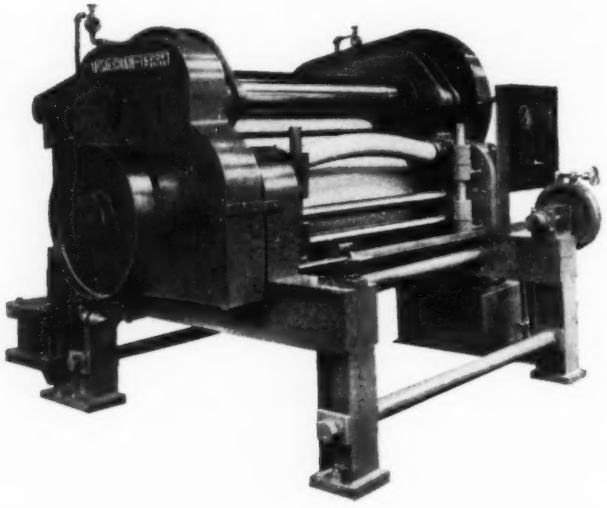
Manufacturing Engineers Since 1895

MAIN OFFICE: 505 MANOR AVENUE, HARRISON, N. J., U. S. A.

PLANTS AT HARRISON, N. J. AND DOVER, N. J.

New McKiernan-Terry MULTI-PURPOSE CALENDER

FRICTION . . . SCHREINER . . .
EMBOSSING SERVICES
ALL IN A SINGLE MACHINE



This new machine by McKiernan-Terry is a most important advance in calender design. Especially adapted for use with resin finishes, it provides quick changeover for any of its three applications; and can be converted from one service to another in only a few hours. The machine is suitable for pressures up to 75 tons, hydraulic or pneumatic, and has been proved in service. Additional features include special oil seals to withstand high temperatures, lubrication by oil circulating and cooling system; and heavy duty antifriction roll bearings which are easily and quickly removable, including housings, by hydraulic pressure.

CALENDER ROLLS

Available for every application. New rolls and refills for any make and type of calender including:

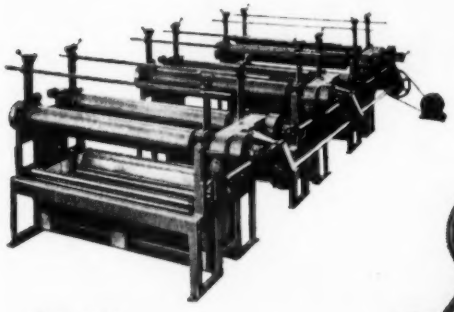
- **Schreiner**
- **Embossing (all types)**
- **Friction**
- **Chasing**
- **Water Mangle**
- **Rolling**
- **Silk**
- **Rayon**

WE OFFER CONSULTING SERVICE ON ALL ROLL APPLICATIONS

Using special and automatically controlled equipment, with selection of proper types and grades of filler with reference to its application plus our own method of determining correct densities, and through modern manufacturing and scientific application methods, we can give you BETTER ROLL LIFE and IMPROVED FINISHES.

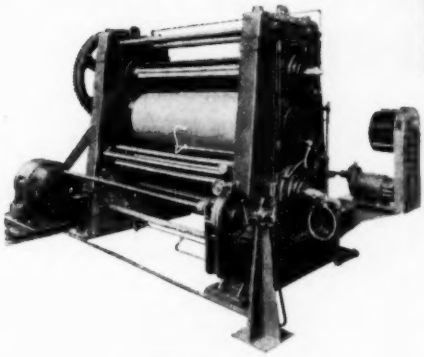
WE SPECIALIZE IN ROLLS FOR RESIN FINISHES

McKIERNAN-TERRY CORPORATION



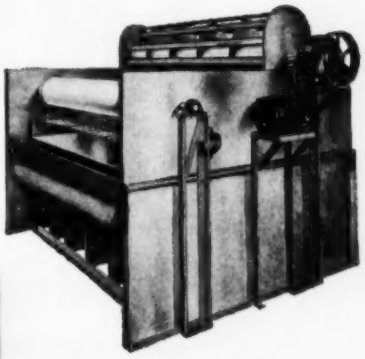
DYE JIGS

Proved in service on heaviest to lightest fabrics. Capacity to 30-inch diameter batch. Oversized clutches and brakes for long life. Single or multiple units.



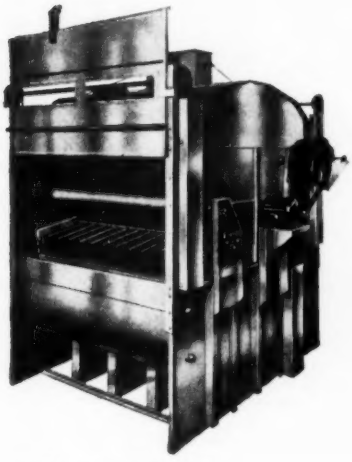
3-ROLL CALENDERS

Illustration shows 80-ton hydraulic rolling calender with easily removable tapered roller main bearings lubricated by oil circulating and cooling system.



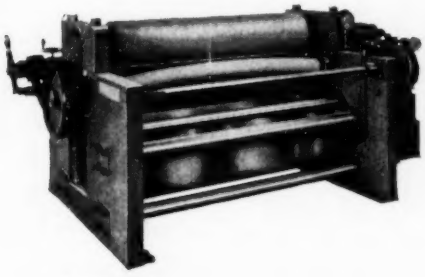
OPEN DYE BECKS OR ROPE TYPE WASHERS

Stainless steel throughout. Choice of many types of reels.



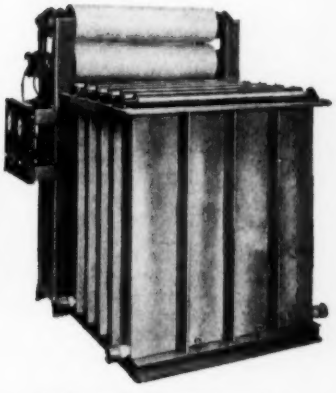
TOTALLY ENCLOSED DYE BECKS

Rigidly constructed of stainless steel, type 304, 316 or 347, including all reels, reel brackets and tub supports. Self-aligning sealed ball bearings on all reels. Tub contours, lengths and depths available for any piece-dyeing requirements, single line or continuous.



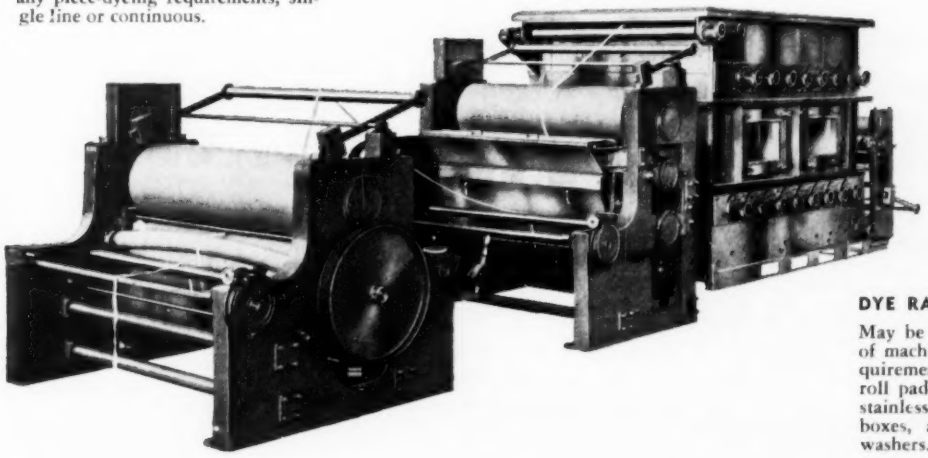
PADDERS

Available in 2 or 3 roll hydraulic or pneumatic. Pressures up to 15 tons. Anti-friction bearings throughout.



OPEN WIDTH WASHERS

With hydraulic or pneumatic squeezers. Available in any number of units.



DYE RANGES

May be furnished in combinations of machines to meet customers' requirements. Available in 2 or 3 roll padders, hot air or can driers, stainless steel steamer, oxidizing boxes, and open width or rope washers.

SMITH-DRUM MACHINES

THE LEADERS in Textile Dyeing . . . Extracting . . . Drying!

Circulating Skein Dyeing Machine

For Filament and Spun Rayon, Nylon and a Wide Variety of Cotton Yarns. This machine revolutionized skein dyeing by a radically new principle of operation which "moves the liquor instead of the yarn". It is recommended for the application of vat, direct, sulphur, chrome, naphthol and acetate colors. A special communicating valve connects various units together, making it the most flexible skein dyeing machine ever built. All parts coming in contact with dye liquor are of stainless steel. Write for Catalog.

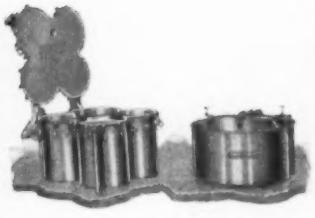
Pulsating Skein Dyeing Machine

For Woolen and Worsted Yarns . . All Counts and Grades. This machine introduced the new pulsating or intermittent flow principle in this country. This principle, which permits the yarn to relax during the dyeing process, improves yarn in both appearance and feel, insures level shades and greatly reduces costs. It handles everything from coarse carpet yarns to the finest of cashmeres. Can handle batches up to 6000 pounds. Write for Catalog.

New Package Dyeing Machine

Specially designed for high temperature dyeing . . up to 325° F. . . with working pressures up to 81 p.s.i. A high pressure sample package kier permits sampling under actual operating conditions . . and a high pressure dye feed kier provides for making "adds" . . both without cooling or shutting down. Supplied with recording control panel. This machine provides increased liquor flow to meet all dyeing requirements. Carriers can be furnished to accommodate spring or rigid tube packages, Barber-Colman cheeses, cakes, tops or raw stock.

Combination Beam and Package Dyeing Machine

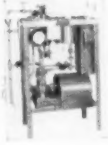


This stainless steel "Cloverleaf" machine dyes 2, 3 or 4 beams or yarn carriers as a unit under identical conditions, in the same dye bath, at the same time. Two units may be built in tandem to dye up to 8 dye beams or yarn carriers at one time.

Package Forming Press

This machine properly prepares the package for dyeing by crimping the edges of the package to aid penetration of the dye liquor at the point.

Single Package Dyeing Machine



Designed for laboratory use in determining formulae to be used in larger machines.

Package Extracting Machine Mechanical Type

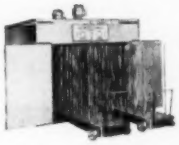
This new type extractor prevents distortion of the package and tends to reshape the package without crushing the dye tube.

The new principle employed in this machine also results in uniform retained moisture content in every package. It occupies considerably less floor space and operates with a smaller motor than ordinary extractors of equal capacity. It greatly reduces labor in loading and unloading . . eliminating the heavy work, so that even a girl can operate the machine. Write for Catalog.

Combination Extractor-Dryer

For air extracting and drying of Beams and Packages while still on the dyeing machine yarn carrier.

Two-Way Package Drying Machine . . Cabinet Type

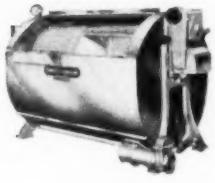


Entirely new principles for drying yarn in package form are embodied in this SMITH-DRUM Package Drying Machine. It cuts drying time over other drying methods. It uses less steam and electric power. Drying cycle ranges from 2½ hours up, depending on count and type of yarn, size and type of package and degree of extraction. It tends to prevent migration of color and to eliminate salt deposits on the yarn. It provides cleaner yarn, more uniformly dried. Write for Bulletin.

Package Drying Machine . . Port Type

For Beams and for Packages and Barber Colman Cheeses while still on dyeing machine yarn carriers.

Hosiery Dyeing Machine . . Rotary Type

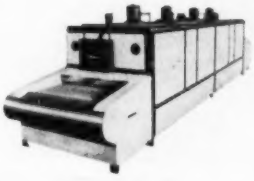


The standard machine consists of a stainless steel tank with sliding cover door fitted with a stainless steel cylinder having a sliding door for each compartment. All gears and fittings inside the tank are of acid resisting bronze. These machines are built in capacities from five to five hundred pounds per batch. Write for Catalog.

Hosiery Dyeing Machine . . Paddle Type

This machine consists of a stainless steel tank fitted with a stainless steel paddle having bronze shaft and center heads. The goods are protected from the stainless steel steam pipes and the drain valve by a perforated stainless steel false bottom. Write for Catalog.

Nylon Hosiery Drying Machine



This revolutionary machine entirely eliminates the costly post-boarding process, making it possible for one operator to do the work of four or five. It produces at the rate of 300 dozen per operator, per 8-hour day. Percentage of menders is greatly reduced. A desirable dull appearance of the hosiery is obtained. There are no forms to be cleaned. Less floor space is required. Complete information on request.

PLUS . . . A Complete Engineering and Technical Service

No other manufacturer of this type of equipment offers the complete engineering and technical service available from Smith, Drum & Company. In addition to an extensive engineering and research department that is thoroughly familiar with all dye-house problems, every Smith-Drum salesman is a graduate engineer and has a thorough knowledge of all branches of the textile industry. It is significant that a great majority of important advancements in dyeing and finishing equipment have been originated and developed by Smith-Drum engineers. Whether or not you are a Smith-Drum customer, our engineering and technical service is at your disposal.

SMITH, DRUM & COMPANY, 432 W. Allegheny Ave., Phila. 33, Pa.

Southern Sales Representatives: PARROTT & BALLENTINE

So. Carolina National Bank Bldg., Greenville, S. C.

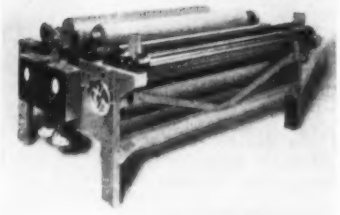
TOWER IRON WORKS

50 BORDEN ST., PROVIDENCE 3, RHODE ISLAND

Northern and Canadian Representative
LINDER AND COMPANY, INC.
296 NORTH BEACON STREET
BOSTON, MASSACHUSETTS

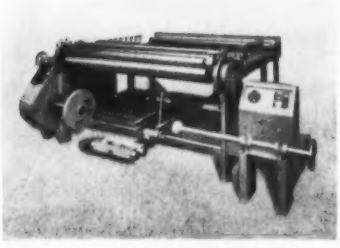
SLASHER EQUIPMENT

TOWER SIZE BOXES



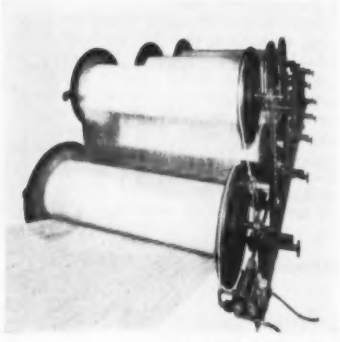
Tower Size Boxes now make possible warp sizing at continuous high speeds, limited only by yarn strength. New and exclusive design features completely eliminate rolling and taping. Precision rolls in ball bearings supported on welded steel frames insure accurate alignment. Pneumatic loading of squeeze rolls provides even nip pressure from side to side. Pressures can be accurately set and varied as required. Efficient steam coil and insulating jacket (or steam jacket) provide uniform size temperature and minimum size turbulence and dilution.

TOWER HEAD ENDS



Tower Head Ends incorporate many exclusive improvements essential to continuous high speed operation. The operator can easily reach the comb from the front of the machine because of the location of the loom beam. Main controls are grouped complete with yardage clock and counter in panel right in front of operator. Pneumatic loading for press rolls is positive and accurate. Turned and polished rolls in ball bearings supported on welded steel frames assure accurate alignment and eliminate vibration problems. Sound engineering, fine craftsmanship, and modern appearance are combined in the Tower Head End.

TOWER CREELS



Tower Creels are of welded steel construction rigidly braced for vibrationless operation at high speed. Adjustable ball-bearing units minimize friction as yarn is unwound. Electrically controlled, pneumatically operated brakes guarantee minimum tension and stretch at operating speeds, yet accurately control deceleration of section beams when "creep" or "stop" button of slasher drive is pushed. Magazine creels are available to reduce lost time between sets.

MIXING AND STORAGE KETTLES

Tower Mixing and Storage Kettles are of highest quality welded stainless steel construction with motor driven stainless agitators designed to produce consistently uniform size. These kettles have glass wool insulation jackets in stainless steel shells to insure even temperature and minimum heat loss. Steam tight seal is used where agitator shaft passes through cover. Inspection door is designed for operator's safety. Automatic controls for cooking and storage are available.

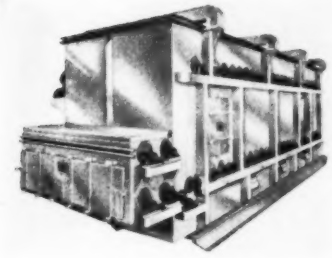
Tower engineers will be pleased to consult with you on the details of Tower Slasher Equipment, complete with multi-motor slasher drives and automatic slasher controls. At no obligation, contact a Tower representative. They're good men to know.

TOWER IRON WORKS

58 BORDEN ST., PROVIDENCE 3, RHODE ISLAND

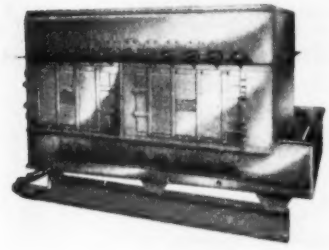
TEXTILE EQUIPMENT

STAINLESS STEEL AGERS



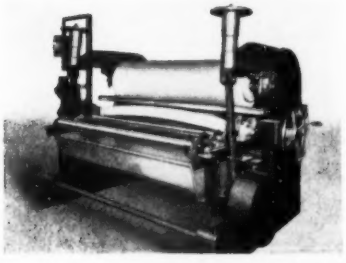
Tower All Stainless Steel Acid Agers are a NEW concept in ager design. Maintenance costs due to cracks and leaks are eliminated because of welded stainless construction. Rounded corners assure maximum structural strength and easy cleaning. Positive pulse-type acid injection into steam system insures maximum color values, uniformity of ageing, and minimum acid consumption. A Tower Ager arrives at your plant completely assembled and accurately aligned, eliminating production delays and high cost field installation. These units are custom built to meet your specific requirements.

STAINLESS STEEL STEAMERS



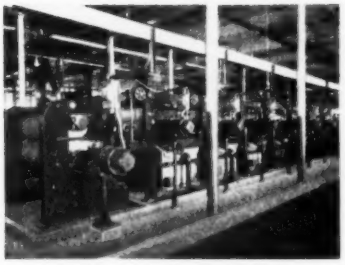
Tower All Stainless Steel Steamers are designed for use in the modern Pad-Steam continuous dyeing process. Welded construction with all rounded corners assures maximum structural strength and easy cleaning. Entire top is heated to eliminate condensation and prevent damage to fabric. Precision alignment is achieved by complete shop assembly and testing prior to shipment as a unit. Tower steamers are built in a variety of sizes, with entrance chambers, draw rolls, and drives to suit your exact requirements.

PADDERS



Tower Pads are versatile machines of practical, modern design, built with either mechanical or pneumatic loading. They are available with two or three squeeze rolls and with a wide variety of stainless steel pans, carrier and immersion rolls. Squeeze rolls are rubber covered to suit specific applications; stainless rolls are also available. Squeeze rolls are supported in roller bearings and are easily removed without dismantling machine. Frames are of welded steel construction. Tower Padders are built in 5, 10, and 15 ton capacities.

OPEN WIDTH WASHERS



Tower Open Width Washers have many advanced engineering features that assure complete washing on all types of fabrics. Boxes are of welded stainless steel construction with large drains and overflows. Carrier and immersion rolls are all stainless. Nip rolls, either mechanically or pneumatically loaded and individually motor driven, are provided between boxes. Expander rolls are provided at each nip. Range drive with individual compensators insures correct tension.

Tower engineers will be pleased to consult with you on the details of Tower Finishing Equipment at no obligation. Contact a Tower representative. They're good men to know.

100 courses per minute

The "READING 100"
Full-Fashioned Knitting Machine

30 SECTIONS 51—60—66-GAUGE

It's the fastest multiple section full-fashioned knitting machine ever built. The direct result of 10 years development and design, a "Reading 100" streamlines the paths of knitting elements, gives you day-after-day speed that increases your profits . . . increases your production . . . through extra courses per minute . . . extra dozens per day.

Check these Features and Attachments . . .

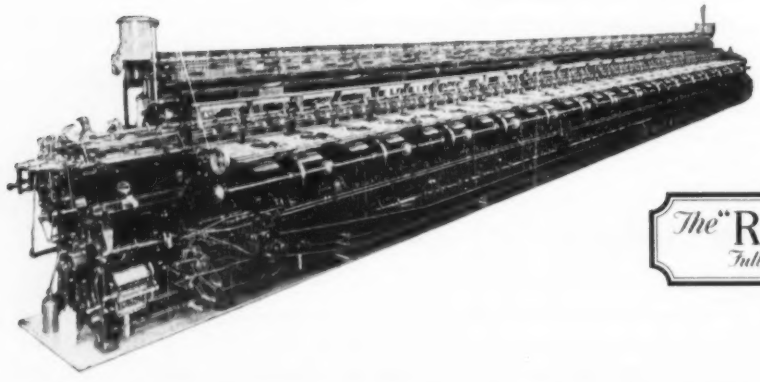
Long Wearing Cams • Oilite Bushings • Air Cushion Brake for Camshaft • Center Drive with Intermediate Drive Shaft with Ring-Oiled Bearings • Automatic Welt Turner • Floating Needle Bars • Interchangeable Parts • Swinging Lever Carrier Rod End Stops • Ball Bearings on Handwheel Shaft • Knockover Bit Beds Integrally Mounted with Sinker-Head • Improved Inside Selvedge Attachment • Water-Cooled Friction Shaft • Automatic Narrowing Lift and Safety Release • Hardened Steel Cam Roller Rings

Three more reasons for a Reading Machine . . .

HALF-POINT NON-RUN ATTACHMENT available as special equipment, with or without Instep Bars for 51-Gauge and 60-Gauge machines. It produces a high-style, non-run, or run-proof fabric. Loops can be spread over two needles without the introduction of additional point bars.

DIAMOND TOE . . . only on Reading Machines can the Diamond Toe be made.

THE SAFETY CARRIER on the "Reading 100" provides better, safer yarn feeding to the knitting elements. Prevents costly sinker damage because the tube swings out of the way upon impact with a sinker. The light weight carrier fingers reduce friction box load, provide lighter impact on carrier stops with less chance of carrier rebound at high speeds.



The "READING 100"
Full-Fashioned Knitting Machine

TEXTILE MACHINE WORKS, READING, PENNA., U. S. A.
Southern Reconditioning Plant, Asheboro, N.C.

Reconditioning of Sinker Heads, including Knockover Bit Bars • Reconditioning of Jack Heads • Work is fast, thorough and dependable • Estimates furnished promptly on request.

Textile

SPRING-BEARD NEEDLES

Arrow*

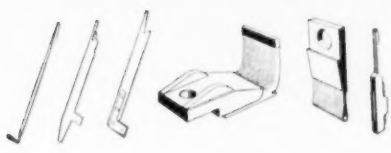
LATCH NEEDLES

Depend on Textile Needles and specialties for superior knitting results. Check your requirements: Spring-Beard Needles, Latch Needles, Guides, Hooks, Points . . . Leaded Units . . . Felting Needles, Stripper Needles. Quotations furnished promptly upon receipt of samples.

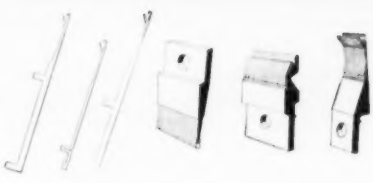
Southern Reconditioning Plant, Asheboro, N. C.

*Arrow Needle Company, Manchester, N. H., is now a unit of Textile Machine Works, Wire Products Division.

TEXTILE MACHINE WORKS, READING, PENNA., U. S. A.
WIRE PRODUCTS DIVISION



COMPLETE
CASTING
SERVICE



IF GUIDE WEAR IS A PROBLEM IN YOUR MILL — USE

HEANIUM®

AN AMAZING MATERIAL

NEXT TO THE DIAMOND IN HARDNESS.

- HIGHLY RESISTANT TO WEAR
- DECREASES DOWNTIME AND REPLACEMENT COSTS
- PERMITS HIGHER PRODUCTION SPEEDS
- OFFERS CHOICE OF FINISH FOR TENSION CONTROL, MATTE, SATIN OR HIGHLY POLISHED
- HEANIUM CAN BE PREPARED FOR SOFT SOLDERING
- GREATER HARDNESS, DENSITY, HOMOGENEITY. HEANIUM IS HARD ALL THE WAY THRU — THERE IS NO SURFACE SKIN TO WEAR.
- HEANIUM IS ADAPTABLE TO MANY APPLICATIONS
- HEANIUM IS THE BEST GUIDE TO LOW COSTS.

COMPARISON OF REPORTED OPERATING HOURS*	
HEANIUM GUIDES	ORDINARY PORCELAIN GUIDES
OVER 7000	8

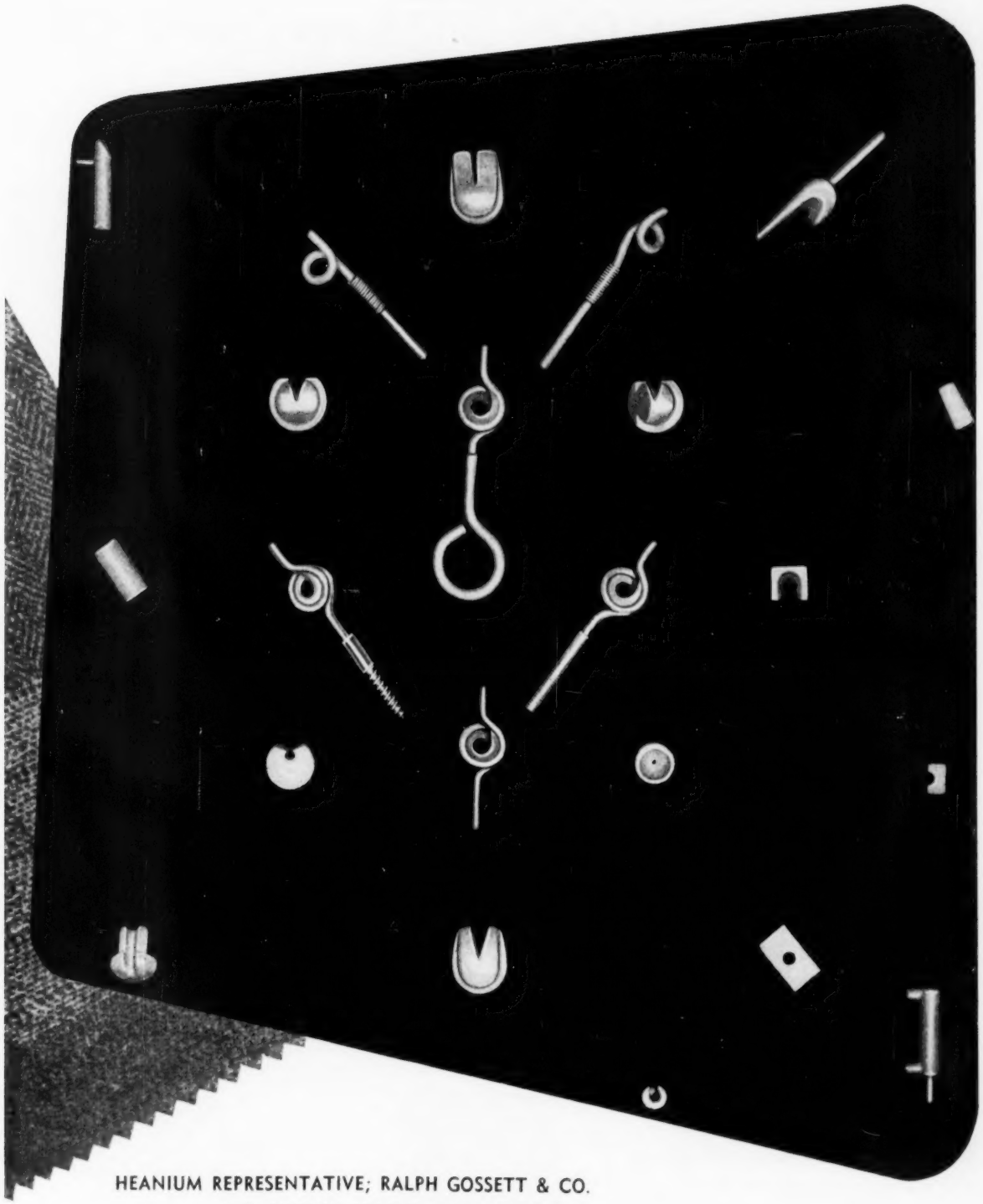
* FOR INSTANCE, WHERE ORDINARY PORCELAIN GUIDES GAVE OUT IN 8 HOURS, HEANIUM GUIDES HAVE BEEN IN SERVICE A YEAR OR MORE.

HARDNESS

MOH'S SCALE 9*

SPECIFIC GRAVITY 3.80

*AS AGAINST 10 FOR DIAMOND



HEANIUM REPRESENTATIVE; RALPH GOSSETT & CO.
8 S. CHURCH STREET, GREENVILLE, S. C.

LET US HELP YOU WITH YOUR GUIDE PROBLEMS: SAMPLE MADE TO YOUR SPECIFICATIONS, FURNISHED FREE. WRITE TO

HEANY INDUSTRIAL CERAMIC CORP.
NEW HAVEN 3, CONNECTICUT

KLAUDER WELDON GILES MACHINE CO.

ADAMS AVENUE AND LEIPER STREET

FRANKFORD, PHILADELPHIA 24, PENNSYLVANIA

DYEING MACHINES

PRODUCTS

SKEIN YARN DYEING MACHINES: Various types for Scouring, Bleaching, and Dyeing Wool and Worsted yarns, and Slubbing, also Cotton, Silk, and Synthetic yarns.

YARN SCOURING MACHINES: Continuous or Apron type in All Stainless Steel construction.

RAW STOCK DYEING MACHINES: Various types for dyeing Raw Wool and Cotton, Waste and Rag Stock, also for Stripping and Bleaching.

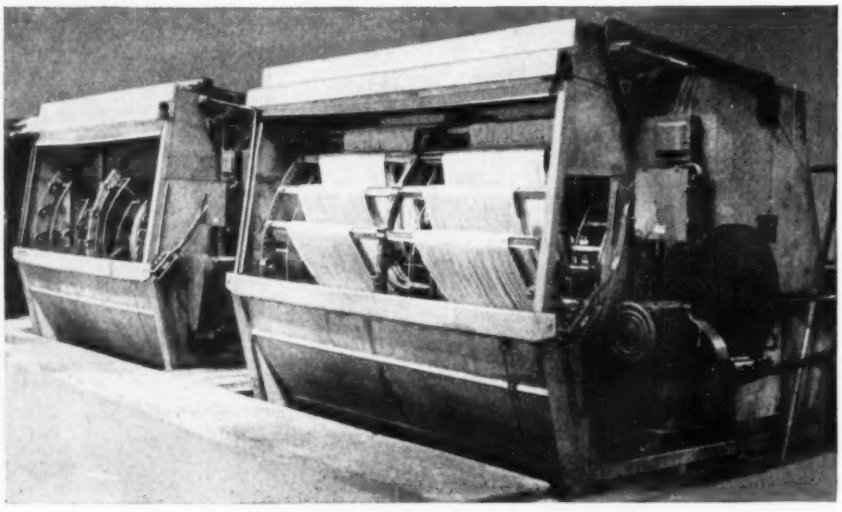
HOSIERY, GARMENT & HAT DYEING MACHINES: Rotary and Paddle Wheel Type.

MACHINE DYESTICKS: of Wood and Stainless Steel. The latter are more permanent—10 times the life of wood sticks and especially advantageous in the processing of Knitting Yarns, Boucle, Ratinet and Frill Yarns.

REPLACEMENT PARTS: for all Klauder Weldon and Giles Machines.

DYE TUBS: Self Supporting Stainless Steel replacement or conversion of old kettles, also of wood either Lined or Unlined.

SPECIAL DYEHOUSE EQUIPMENT: In Stainless Steel construction.



2—500 lb. Capacity Stainless Steel Non-Hoist Type Skein Dyeing Machines.

ROTARY SKEIN DYEING MACHINES

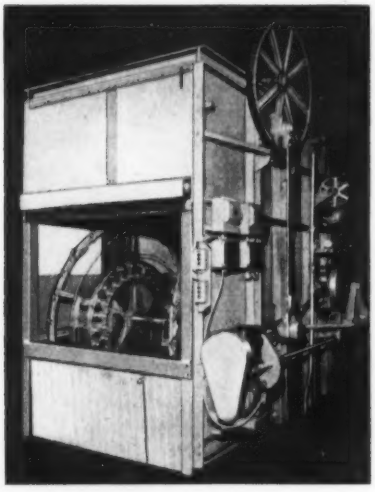
The well known and universally used Rotary Type Machines featuring All Stainless Steel construction is a specialty with us.

These machines are built in a wide range of sizes and two distinct types:

NON-HOIST MACHINES: for Wool, Worsted and Unmercerized Cotton yarn, and, **HOIST MACHINES:** for Silk, Rayon, Mercerized Cotton, and other yarns which are especially receptive to color. The hoist feature enables raising the reel with its load of yarn from the liquor for bath make up, sampling, and color or chemical additions.

The skeins to be dyed are suspended on a series of pairs of wood or metal dyesticks. The outer sticks are carried in suitable cups in the outer periphery of wheels forming the reel and the inner ones in suitable recesses in rings attached to the arms of the wheels about midway between the axle and periphery. Rings carrying the inside sticks are adjustable to provide proper angle of suspension and tension on all varieties of yarn or length of reeling and are also made, when desired, with several series of cups to handle a wider range of skein lengths. Retainers of the yarn carrying sticks provide for quick and easy loading and unloading of the machine.

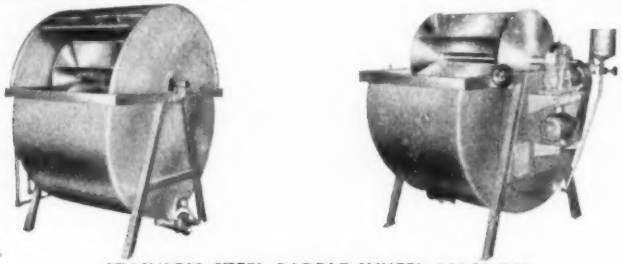
The reel revolves half submerged in the dye bath and the dyeing in accomplished by gently passing the yarn through the bath. Each pair of sticks is given a quarter turn at each revolution of the reel to provide complete penetration and level dyeing of all portions of the skeins. For level dyeing and improved condition of the yarn after dyeing this principle has not been improved upon. It provides remarkable flexibility as regards variety of yarns and wide variation in yarn loads that may be dyed or processed in a machine of any rated capacity.



250 lb. Capacity Stainless Steel Hoist Type Skein Dyeing Machine.

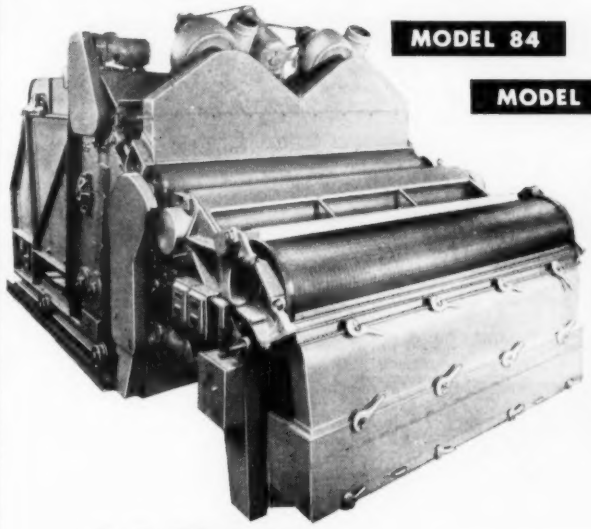
NEW PADDLE WHEEL DYEING MACHINE . . . of all stainless steel construction is designed for the successful dyeing of a wide variety of products including tapes, sweaters, hosiery and other garments.

Write today for a newly printed bulletin describing this machine in detail.



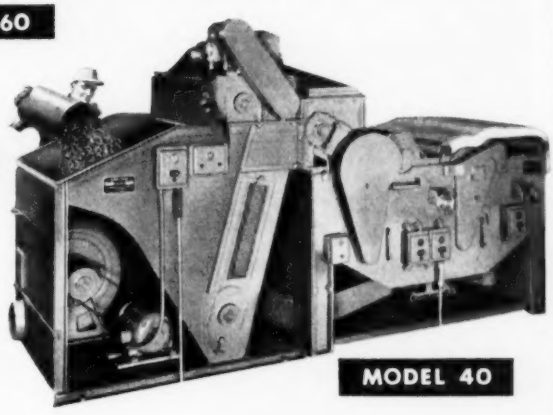
STAINLESS STEEL PADDLE WHEEL MACHINE
is available with or without cover.

REPLACEMENT PARTS FOR ALL KLAUDER WELDON & GILES MACHINES



MODEL 84

MODEL 60



MODEL 40

NOW RANDO-FEEDERS AND RANDO-WEBBERS IN 3 SIZES

Make Non-Oriented Webs 40", 60" or 84" WIDE

Excellent for Industrial Non-Woven Fabrics, Pressed Felt, Punched Felt, Automotive and Furniture Upholstery, Pads and Waddings, Industrial Package Wadding, Base Material for Coated Fabrics, Reinforcement Material and Household Non-Woven Fabrics.

Only a Rando-Feeder and Rando-Webber can economically blend almost any type fiber—waste or staple... produce webs from many materials that cannot be handled successfully on other equipment.

Non-oriented webs have no crosswise, vertical, or horizontal pattern . . . can be made in thickness from paper-thin to 2-inches . . . have strength in all directions . . . are resilient . . . will resist delamination and splitting. Webs made by Rando-Feeder and Rando-Webber can be dry processed, needle punched, quilted, felted and heat sealed.

Your waste and staple fibers can make additional profit for you. Inquiries are welcomed. Webs made from your own fibers for test purposes.

TEXTILE DIVISION

CURLATOR

CORPORATION

EAST ROCHESTER, NEW YORK

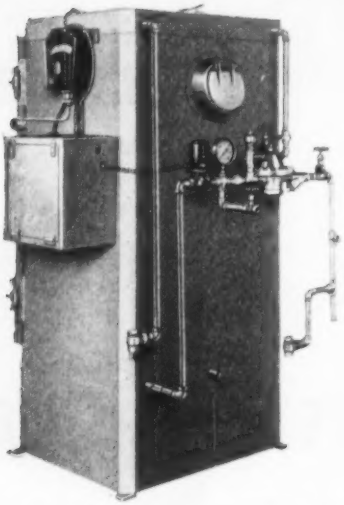
Paramount Textile Machinery Co.

Main Sales Office

131 S. WABASH AVE. • CHICAGO 3, ILL., U.S.A. • Phone Financial 6-0125

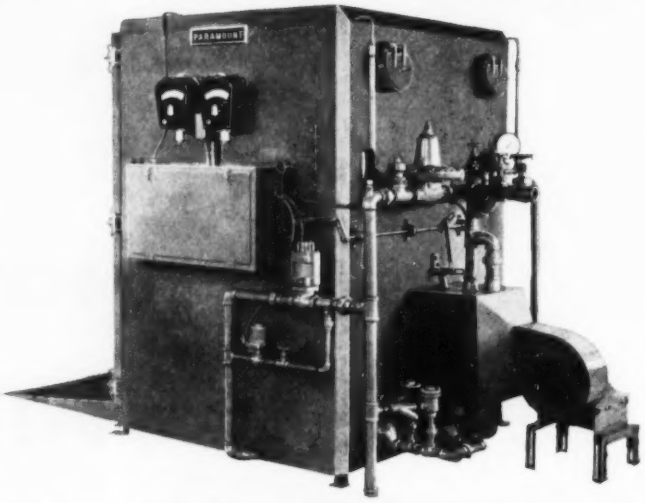
FACTORY—KANKAKEE, ILLINOIS • CABLE ADDRESS PARFORM

Presetter *Junior* The answer to greige mill standardized presetting.



Only 3/10's the size of the Universal Presetter, Junior's treating time is two to four minutes plus a minute or two loading time when steaming before preboarding.

Universal Presetter Presets and dries efficiently for all methods of nylon hosiery processing.



Complete treating and drying cycle in approximately 20 minutes. Exhaust vents with exterior self-sealing louvers operate automatically without thermostatic or mechanical controls.

Paramark *Model 3* Transfer Machine

The revolutionary new Paramark Model 3 Transfer Machine makes possible the application of one, two and even three perfect transfers to each pair of socks in one simple operation. Two operators can process goods twice as fast as present methods allow and four times as fast when applying two transfers. Hi-Speed sponge rubber stamping pads assure uniformly clean transfers while fully automatic operation enables even the most inexperienced beginner to reach capacity production in a few hours.

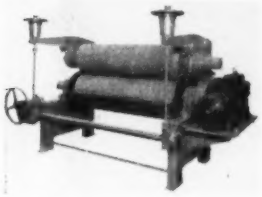
Patent Applied for

COOK-P & N

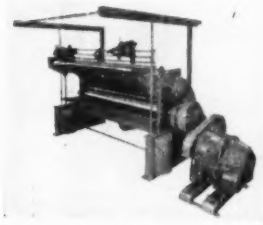
MACHINE CO., INC.
365 DORCHESTER AVE., BOSTON 27, MASS.

Wet Finishing Process

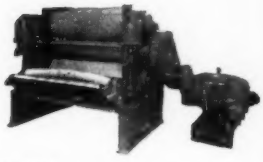
COMPLETE RANGES
INDIVIDUAL MACHINES



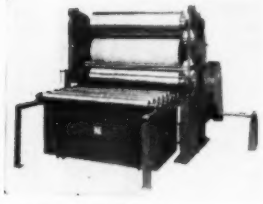
PADDERS
5 to 15 ton—50" to 110" face.
2 ROLL MICRO, style 3.
Remove rolls without disturbing bearings.



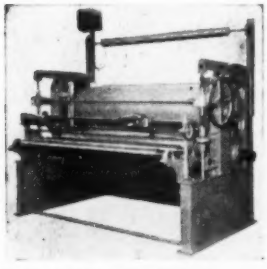
2 ROLL PNEUMATIC
Modifications for all processing.



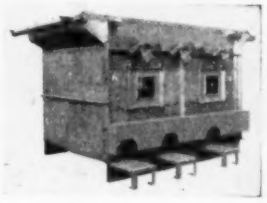
3 ROLL
New pressure application has proven very satisfactory.



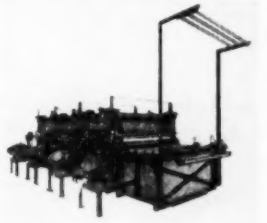
3 ROLL PNEUMATIC
Complete padder for mercerizing & open width bleaching.



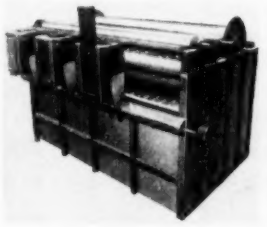
NEW LEVER SET PADDER



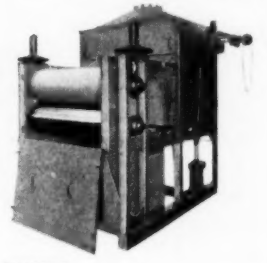
STEAMERS
Pat. Pend. In all lengths for steam pad dyeing, desizing or printing.



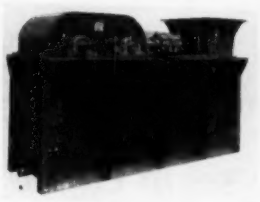
WASHERS
Unit construction. Stainless Steel & rubber covered rolls.



SLACK WASHERS
Stainless steel. Several models.



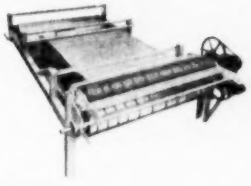
SINGERS
Compression type. Single or double stranding.



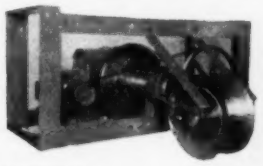
SATURATORS
Stainless steel.

J-BOXES
Stainless steel. For continuous bleach & desizing operation.

SINGERS
Open flame



SCRAYS
Overhead-horizontal. Any capacity or width in small space. Selvage stays in alignment.



DETWISTERS
Cook patented machine. Removes twist from all fabrics.

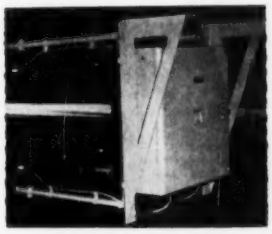


PHOTO-CONTROL
Cook patented photo-electric control for automatic operation of detwisting machines.

DETACKER
Cook Automatic Detacking Machine. Removes tacking from all fabrics. Pat. pend.

CLOTH OPENER
Several styles, with or without vacuum.

These machines are some of the **COOK-P&N** *units used in our continuous ranges:*

- **Complete Steam Pad Dye Ranges**
- **Complete Continuous Bleach Ranges (DuPont License)**
- **Complete Desize Ranges For All Fabrics**
- **Complete Finishing Ranges**
- **Complete Automatic Cloth Opening Ranges For All Fabrics**

Inquiries in regard to these and other units promptly answered

HEMPHILL COMPANY

Makers of Banner Circular Hosiery Knitting Machines

Main Office and Plant: Pawtucket, R. I., U.S.A.

New York 1, N. Y.
Empire State Bldg.

High Point, N. C.
Hemphill Bldg.

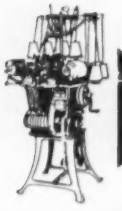
THE ONLY KNITTING MACHINE COMPANY IN THE WORLD PRODUCING A COMPLETE LINE OF ARGYLE, SOLID COLOR AND INLAID PATTERNING MACHINES WITH AND WITHOUT ATTRACTIVE OVERPLAIDS.

SCOP SOLID COLOR OVERPLAID . . .

Knits REAL argyle hose in clear solid colors with overplaid variety. Production quality is comparable to that of hand knit, semi-automatic or any other method of manufacture.

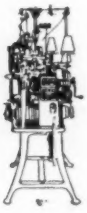
VIP VARI-INLAID PATTERN . . .

Knits sharp edged inlaid diamond clusters. Seven yarn levers plus individual needle control permits intricate patterning never before accomplished on automatic machines.



SCP SOLID COLOR PATTERN . . .

Knits 8 different solid colors—any five to one course, allowing unlimited pattern variety for attractive men's and boy's hose. Smooth finish inside and out. No floats to trim.

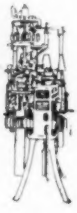


ARA AUTOMATIC RIB-TOP ANKLET . . .

Knits horizontally striped misses' and children's anklets in a variety of colors and cuffs. Picot edge if desired. Sizes 4 to 12 on same size cylinder. Rib tops automatically transferred.

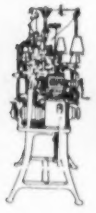
DRCS DIAL RIB CUSHION SOLE . . .

Knits rib top socks to armed forces rigid specifications. Also knits sport and crew socks with or without colorful horizontal stripes and cushion sole. Double sole trim available.



29A-ESJ WRAP and REVERSE . . .

Internationally famous and popular Banner Wrap machine . . . Knits up to 18 wrap colors, argyles, checks, diagonal stripes, fancy and three color clocks, normal and reverse plaits.



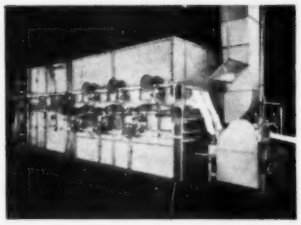
HTF VARI-PATTERN and MESH . . .

Fast performing high production machine. Tremendous range of fancy patterns and mesh knits. Extremely low initial cost and upkeep. Tropic weight hose to satisfy the fussiest.

REPRESENTATIVES HEMPHILL BANNER MACHINES Shaping Hosiery's Footprints All Over The World! **IN ALL COUNTRIES**

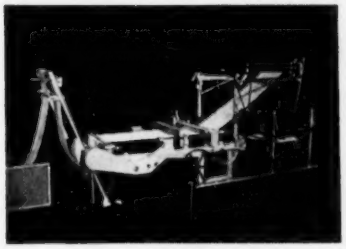
FOR ASSURED PERFORMANCE USE GENUINE BANNER PARTS AND SUPPLIES

For more information, write direct or use Reader Service post card.



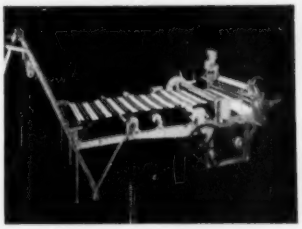
REEL DRYER RANGE for knit goods

A high speed Range that continuously wet spreads, extracts, chemically processes, dries, conditions and dry flat folds. This range features low labor cost, elimination of cloth end waste, and minimum steam consumption.



TENSIONLESS CALENDER

A steaming machine for quality controlled knit fabrics. Designed to reduce and control relaxation shrinkage of underwear and outerwear. It can be adapted to the continuous steaming of sweater, girdle and swimsuit materials.

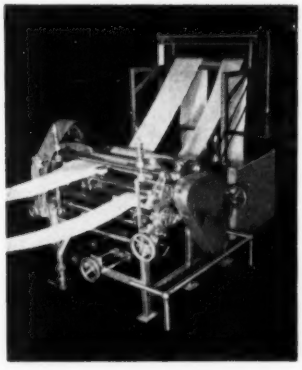


STRAIGHT LINE CALENDER

A high speed finishing machine designed for straightening fabric stripes, patterns, or cross line in a single pass. The machine will spread, cool, rool up and measure any style of circular knit fabrics. It is a highly productive unit, operating at speeds up to 45 yards per minute.

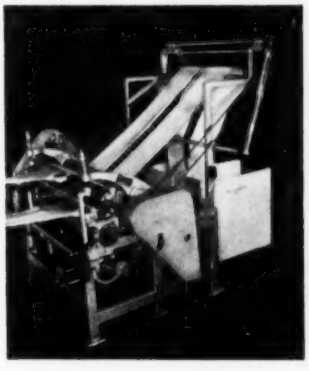
tube-tex®

The Finest Name in Knit Goods Finishing Machinery



EXTRACTOR PAD

A high speed unit handled by one operator. Designed to process one or two strands of fabric similtaneously. The Extractor Pad will continuously detwist, wet spread, extract, chemically process, and wet flat fold any type of circular knit goods.



EXTRACTOR

A machine that out-performs any other means known for extracting knit goods. It is the only method wherein fabric passes from the soaking wet rope condition to the flat folded extracted state in a single operation. It produces cloth with a clean surface appearance and uniformity. Can easily be converted to the Extractor Pad, if desired.

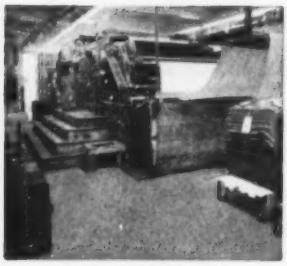
TUBE-TEX is fully covered by patents issued and pending. All patents controlled by:

tubular textile machinery corporation

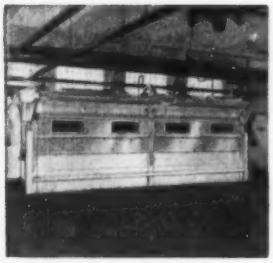
33-61 54th STREET, WOODSIDE, LONG ISLAND, NEW YORK—HIckory 6-2000

Licensed agents and manufacturers: H. W. Butterworth & Sons Co., Bethayres, Pennsylvania.

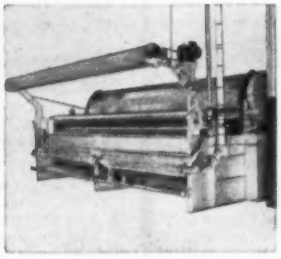
A COMPLETE LINE OF MODERN EQUIPMENT TO SUCCESSFULLY HANDLE PRESENT-DAY FINISHING, CARBONIZING AND DYEING REQUIREMENTS



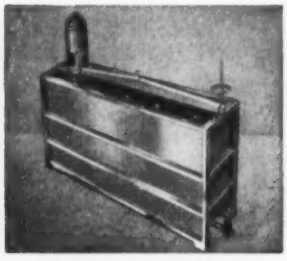
Carbonizing Range



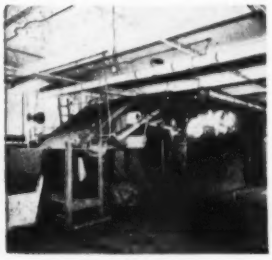
TLBT Piece Dye Kettle



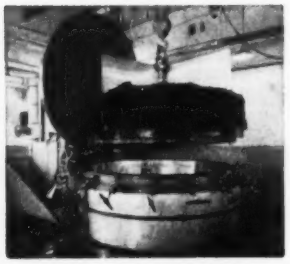
Modern Dye Beck



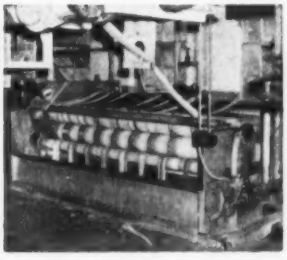
Top Dyeing Machine



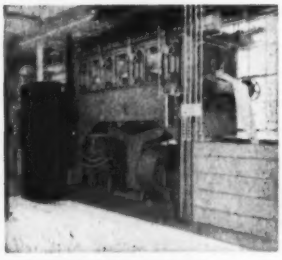
Cloth Dryer



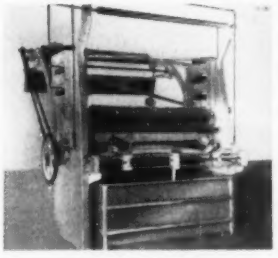
Stainless Stock Dye Kettle



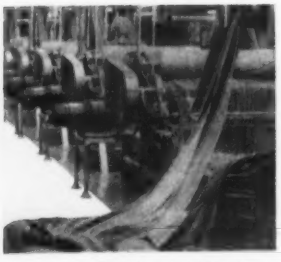
Slack Washer



Continuous Crusher



Type AD Padder



Laxloop Continuous Washer

Derby Continuous Dry Cleaner

All Stainless Steel Fulling Mill

- Piece Dye Kettles
- Bleach and Dye Kettles for Tubular Knit Goods
- Sample Piece Dye Kettles
- Dye Becks
- Top Dye Kettles
- Hy-Temperature Stock Dye Kettles
- Stainless Steel Continuous Cloth Washer Ranges
- Cloth Washers
- Soaping Systems
- Soaping Machines
- Fulling Mills
- Squeeze Roll Extractors & Padders
- Yarn Steamers & Conditioners
- Derby Continuous Dry Cleaner
- Cloth Dryers
- Carbonizing Ranges
- Continuous & Semi-Continuous Crushers
- Progressive Jigs
- Rolls & Reels
- Tanks, Pails, etc.
- Stainless Steel Trucks
- Size-Cooking & Storage Tanks
- Mixing Tanks & Dye Feeding Equipment
- Caustic Washers
- Pusher & Kicker Mills
- Felt Washers & Fulling Mills
- "J" Boxes & Bleaching Ranges
- Size-Cooking & Storage Tanks
- Mixing Tank & Dye Feeding Equipment
- Caustic Washers
- Pusher & Kicker Mills
- Felt Washers & Fulling Mills

RIGGS and LOMBARD, INCORPORATED

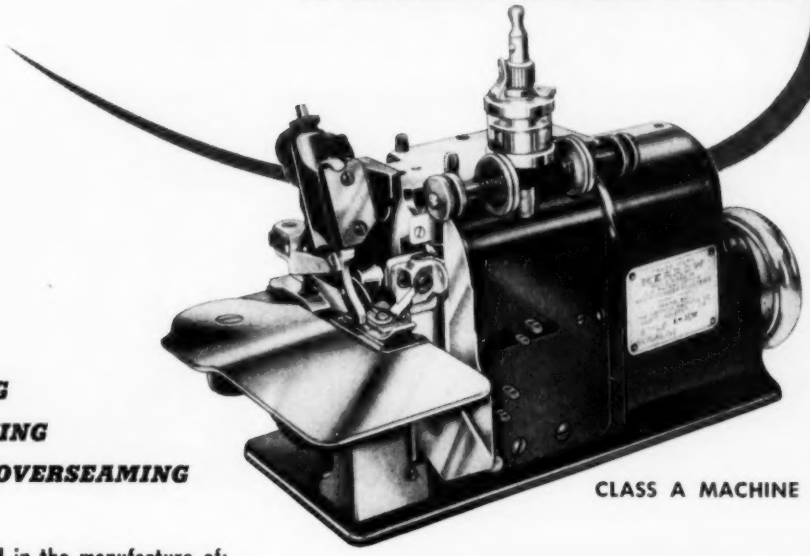
FOOT OF SUFFOLK STREET — LOWELL, MASS.

Domestic & Canadian Agents: Paul A. Merriam Co., 1491 Broad St., Prov., R. I. ● Charles H. Dunker, 1236 S. Maple Ave., Los Angeles 15, Calif. ● Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill. ● A. H. Zayotti, P. O. Box 125, Riverton, New Jersey ● H. E. Mott Co., Ltd., Brantford, Ont.

Export Agents: Latin America—Balkan States, Egypt, Palestine, India—Meyer, Lyra & Co., 228-229 Fulton St., N. Y., N. Y. ● South Africa—Noel P. Hunt, Pty., Ltd., Embassy House, 326 West St., Durban, South Africa ● China—G. R. Coleman & Co., Inc., 50 Church St., N. Y., N. Y.

MERROW MACHINES

- *OVEREDGING*
- *OVERSEAMING*
- *HEMMING*
- *SERGING*
- *SHELL STITCHING*
- *CROCHET STITCHING*
- *SHIRRING WITH OVERSEAMING*



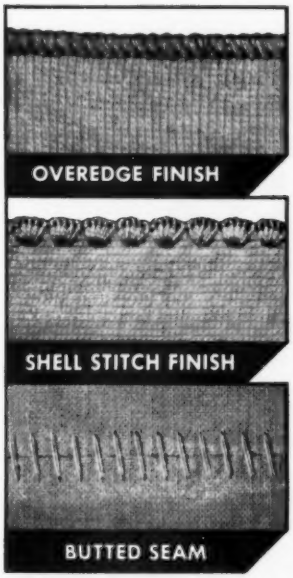
CLASS A MACHINE

"MERROWS" are extensively used in the manufacture of:

LADIES' SLIPS
PANTIES AND BRIEFS
CORSETS AND GIRDLES
ELASTIC KNIT ARTICLES
SWEATERS
ATHLETIC SHIRTS
POLO SHIRTS
PAJAMAS

INFANTS' WEAR
WASH CLOTHS
HANDKERCHIEFS
PILLOW CASES
BATHING SUITS
BLANKETS
SILVER CASES AND NOVELTIES
WORK GLOVES

CHILDREN'S CLOTHES (KNITTED AND WOVEN)
TROUSERS—SERGING, SEWING POCKETS AND FLY
LADIES' HOSE—WELTING TOPS, MOCK SEAMING, MENDING THIRDS
SKI OR LOAFER SOCKS
ANKLETS—ATTACHING TOPS
LAUNDRY AND FRUIT BAGS
PIECE GOODS—JOINING ENDS TO FACILITATE PROCESSING



OVERSEAMING OR EDGE FINISHING MACHINES

Merrow High Speed Overseaming or Edge Finishing Machines produce a finish made up of one, two or three independent threads. They are adapted for use on knitted and woven articles of practically every description where the operations of overseaming, hemming and edge finishing are involved. They can be used on cotton, wool, silk, rayon, nylon and other synthetics, and can handle weights from handkerchiefs to heavy outerwear. Most of these machines are provided with trimming devices and with a differential or gathering feed.

PLAIN CROCHET, BLANKET HEMMING AND SHELL STITCH MACHINES

These Merrow Machines produce a variety of crochet finishes, both plain and shell stitch. They are designed to produce shells of several sizes and may be arranged to make either a single row or two rows and to insert a tape under the finish if desired.

BUTT SEAMING MACHINES

Merrow Butt Seaming Machines are used for joining cloth for process finishing operations such as dyeing, bleaching, printing, shearing, etc. When opened flat by the tension of processing, the butted seam permits the joined pieces to assume an end-to-end relation. They are used on cotton, wool, silk and synthetics, and when cloth is either wet or dry.

SAMPLES, CATALOGS, ETC.

Samples of the work from Merrow Machines, together with complete information, will be supplied on request. We will be glad to demonstrate the work of these machines on your own material.

TRADE MARK REG

The MERROW MACHINE COMPANY

ESTABLISHED 1838 INCORPORATED 1896

2803 LAUREL STREET•HARTFORD•CONN., U.S.A.

For more information, write direct or use Reader Service post card.

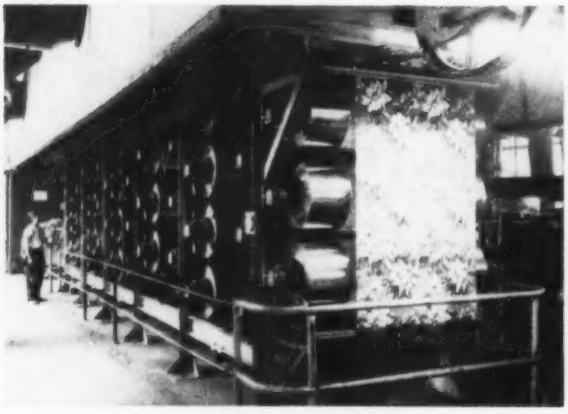
UNISTEL

Stainless Steel Textile Mill Equipment

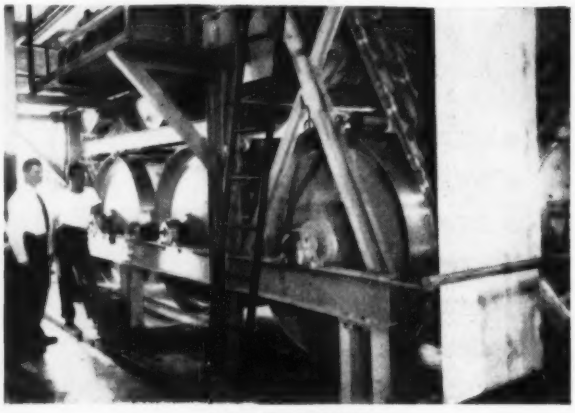
Complete Can Dryers
Complete Back Dryers
Slashers
Cans
Rolls
Roll Covering

Color Kettles
Dye Kettles
Size Kettles
Steamers (Pad-Steam)
Chemical Pads (Pad-Steam)

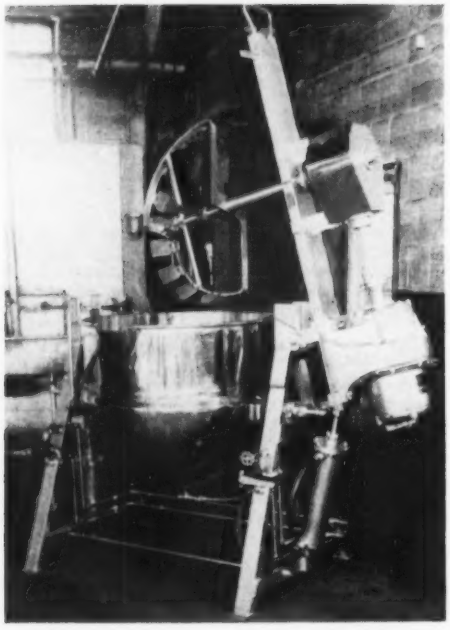
Complete Ranges—
Scutcher
Mangle
Dryer
Folder or Batcher
DC Drive

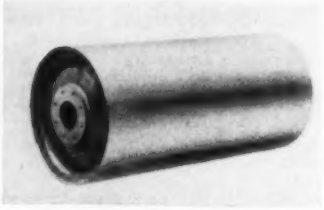


CAN DRYERS



BACK DRYERS





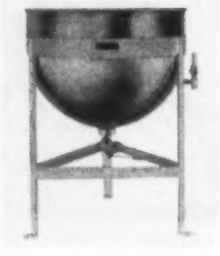
Unistel Precision Built High Pressure Stainless Steel Cans with pressed steel reverse dished heads. Built in 23", 30", and 60" diameters for 50 and 75 psi working pressure.

KETTLES

— Stainless Steel Jacket Color Kettles. Double motion scraping blade agitator. Tilted by pneumatic cylinder or worm and gear hand wheel. Standard capacities up to 300 gallons.

— Stainless Steel Jacketed Size Kettles. Double motion scraping blade agitator. Standard capacities up to 300 gallons.

— Size Kettles with Agitator raised for cleaning and inspection.



Engineers, Designers, and Builders of Textile Machinery

UNISTEL TEXTILE MACHINE CORP.

225 Westchester Avenue • Port Chester, N. Y.

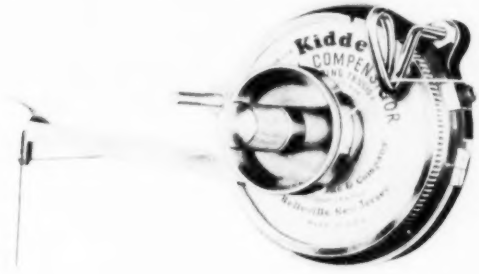
P. O. Box 470

Kidde in the TEXTILE INDUSTRY

Walter Kidde & Company, Inc., 1263 Main St., Belleville, New Jersey, designs and manufactures Yarn Machines, Tension Controls and Fire Extinguishing Equipment.

Kidde Manufacturing Company, Inc., 41 Farrand St., Bloomfield, New Jersey, its subsidiary, designs and makes Raschel and Tricot Knitting machines.

KIDDE TENSION CONTROLS



STANDARD TENSION COMPENSATOR

For moderate yarn speeds and tensions, the Standard Model is especially useful with cottons and rayons, warping of rubber yarns and winding of narrow fabric bobbins. Can be set to any tension from 10 to 120 grams or 100 to 300 grams, and applies the required amount of pressure on the yarn to create constant output tension.

WARP TENSION COMPENSATOR

The Warp Compensator will handle yarns at any tension up to 20 grams. It prevents uneven tension at the warp beam, resulting in increased efficiency in subsequent operations. Insures uniform yardage of all ends on the beam and between beams. Compact, easy to install, and fully automatic. Can be furnished with stop motion to stop warper or signal when tensions are outside of the limits of the compensator.

DOUBLE DISC COMPENSATOR

For controlling tensions of delicate yarns at high speeds. The compensating principle used insures constant tension at the quill, resulting in improved quality and greater efficiency at the loom. Two models—10 to 140 grams and 100 to 300 gram heavy duty model.

Eliminate guesswork and the human element from tension control—use long lasting, engineered tension compensators that are a revolutionary improvement over conventional types . . . produced by Kidde.

for information, write to

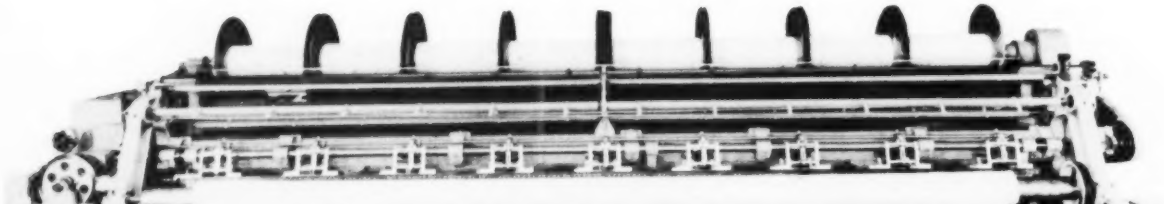
Walter Kidde & Company, Inc. 1263 MAIN STREET · BELLEVILLE, N. J.

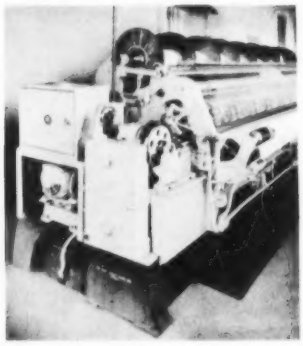
Kidde-Aveco

FOR TOP QUALITY FABRICS

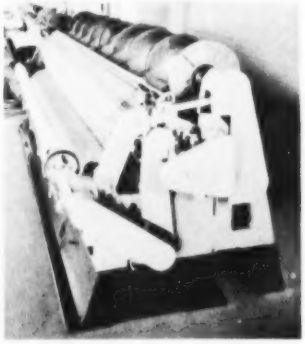
HIGH SPEED TRICOT MACHINE

Recognized as one of the highest poundage producers in the industry, the KIDDE-AVECO, Two Bar, Tricot Machine is widely used to produce fabrics for underwear, dresses, blouses, sport shirts, gloves, millinery, etc.





Left End—Showing pattern wheels, motor and control cabinet.



Right End—Showing continuous let-off and take-up.

Specially designed for continuous operation at high speed the KIDDE-AVECO is the heaviest and most ruggedly built machine available today. Exclusive KIDDE-AVECO features are the rigid welded base that provides a solid foundation . . . one piece cast girder that maintains machine alignment . . . totally enclosed, oversized cams that run in a bath of oil.

Specifications—Knitting width 168 inches. Weight approx. 12,000 pounds. Available in 28 or 32 gauge with butted or leaded needles. Handles 21 inch diameter spools. Regularly supplied with pattern wheel drive. Chain drum drive available. Length 19 feet 2 inches—Width 5 feet 5 inches—Height 5 feet 11 inches.

FEATURES—

CONTINUOUS LET-OFF.

A simple mechanical let-off that drives the beams from the cam shaft through a variable speed transmission controlled by the tension bars. Easy to set and maintain. Eliminates shade marks and reduces stop marks. Improves fabric quality.

QUICK STARTING AND STOPPING.

5 H.P. high starting torque motor, equipped with variable speed drive, gives quick acceleration. Magnetic motor switch and "quick stop" to reduce stop marks. Tachometer and 2-shift rack counter are standard equipment.

CONTINUOUS TAKE-UP.

Quality is established without changing gears or sprockets. Once set, runner remains constant.

For further information, write to—

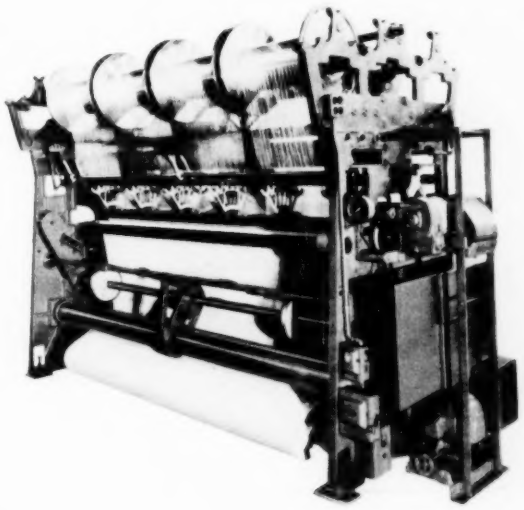
KIDDE MANUFACTURING CO., INC.
42 FARRAND ST.
BLOOMFIELD, NEW JERSEY

Kidde Knitter

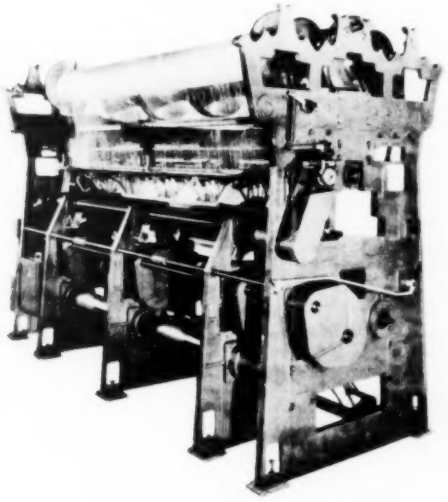
RASCHEL TYPE WARP KNITTING MACHINE

Today more KIDDE KNITTERS are operating in American textile mills than all other makes of Raschel machines combined. They are producing elastic fabrics for corsets, girdles and brassieres, tulle, nettings and veilings, outerwear fabrics, underwear fabric, dish cloth material, shoe cloth, hair nets, lace edgings and trimmings, sport shirtings, laundry nets, etc.

Available with two or more Guide Bars. Single Needle Bar Machine for operation in 18, 24, 26, 36 or 48 gauge. Knitting width 100". Can be equipped for 14" or 21" diameter Spools or with Beam Flanges for full width warping. Simple and reliable brake let-offs controlled by tension bars. Cams and Counter Cams throughout—completely enclosed, running in oil. Double Swing Bar Cams, Pattern Wheels or Chain Links. Electric Brake and Clutch. Outside Cloth Roller, and Continuous Take-Up. New Knee Type Latch Needle. Length 140"—Height approx. 90", Width approx. 70".



Model E—Front View



Model E—Rear View

ATTACHMENTS MAKE KIDDE KNITTER MORE VERSATILE

Special attachments, available for producing specific fabrics, improve fabric quality and increase production speed. Sinker Bar attachment makes tighter stitches possible and eliminates selvage troubles without slowing machine speed. Power let-off for rubber beams improves the quality of elastic fabrics. Power Yarn Feed assures uniform quality at high speeds and permits the use of large warps. Larger fabric rolls can be made with the Outside Takeup.

For further information, write to—

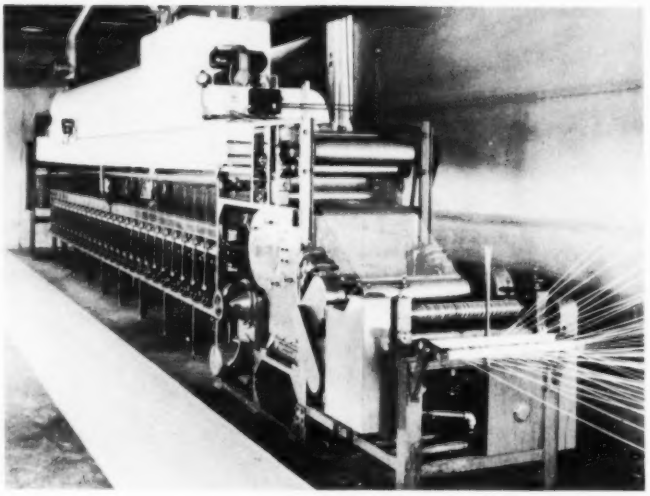
KIDDE MANUFACTURING CO., INC.
42 FARRAND ST.
BLOOMFIELD, NEW JERSEY

MAKE SYNTHETIC YARNS USABLE INDUSTRIALLY

Process a wide variety of synthetic yarns . . . combine the essential yarn treating processes of chemical impregnation, stretching, curing and drying under controlled conditions . . . with the

KIDDE YARN TREATING MACHINE.

Kidde's Yarn Treating Machine handles 50 separate ends fed from a magazine creel, at speeds ranging from 6½ to 100 yards per minute.



Achieve these Results:

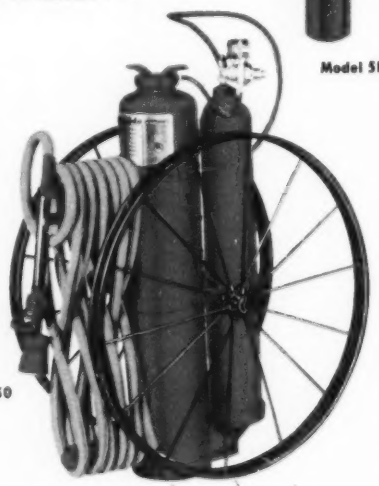
1. **Control elongation**
2. **Control residual shrinkage**
3. **Make synthetics compatible with rubber and other materials**
4. **Increase tensile strength of certain synthetics**
5. **Stabilize synthetic yarns**

EXTRA PROTECTION WITH *Kidde* DRY CHEMICAL FIRE EXTINGUISHERS

Kidde Dry Chemical Extinguishers give extra speed, extra coverage . . . an extra margin of safety that makes them your best weapon for smothering fires in textiles, flammable liquids and live electrical equipment. Highest Underwriters' and Factory Mutual Ratings. All Kidde portables have Trigger Finger Control . . . are simple to operate because there is nothing new to learn. They're compact . . . lightweight . . . easy to handle . . . simple to service.

Charge the Model 5P Dry Chemical Extinguisher at your plant air line or any service station air hose! Pressurized with 150 pounds of dry air, the Model 5P is an effective fire killer that can be put back in service a few minutes after use.

For all-around plant protection, there's no match for Kidde Model 20 and 30. CO_2 expels the powder through the patented Diffuser Horn. Simple to operate . . . with single trigger control for both the powder and carbon dioxide cartridge.



Model 150

Model 5P

Model 20

Model 30

For controlling extra large fires, the 150 lb. Dry Chemical Wheeled Extinguisher is a "One Man Fire Engine." Adapted for indoor or outdoor use . . . easily handled by one man . . . equipped with 50 feet of ¾" dia. hose. A versatile heavy duty fire fighter.

for information, write to

Walter Kidde & Company, Inc. 1263 MAIN STREET · BELLEVILLE, N. J.

Mount Hope HANDLING DEVICES FOR CLOTH · PAPER PLASTIC

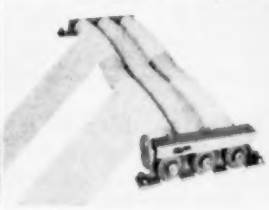
MOUNT HOPE MACHINERY COMPANY

TAUNTON, MASS., U. S. A.

P. O. Box 1058 • Phone Taunton 4-6994 • Cable MOHOMAC

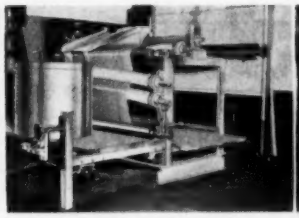
FREE WHEELING EXPANDER

Removes wrinkles and creases—holds to full width. Sealed ends for wet service. New brackets for easy adjustment. From 7" to 250" face of roll.



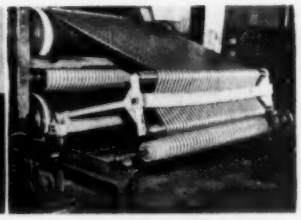
DOUBLE BOW EXPANDER

For handling two strands of cloth. Special adjusting brackets to control width.



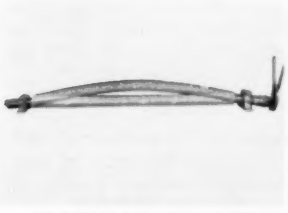
SLACK SELVAGE ELIMINATOR

Prevents cloth damage on shearing machine—eliminates cut selvages and wrinkles. Prevents uneven coating on coaters.



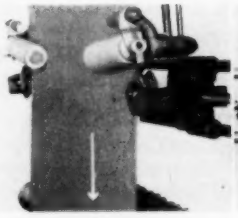
BATCHER EXPANDER

Extra Heavy Duty — eliminates wrinkles — controls firmness of roll.



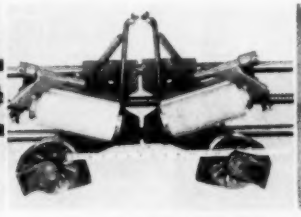
NEW VARI-BOW EXPANDER

Adjustable to exact requirements while operating at full speed.



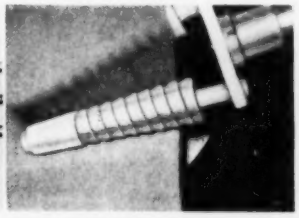
PRECISION GUIDER

Controls lateral movement of all types of fabrics within extremely narrow limits.



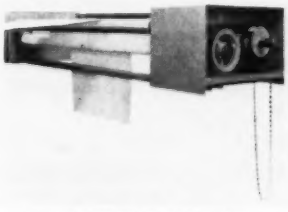
NARROW FABRICS GUIDING

For handling narrow fabrics down to 12 inches.



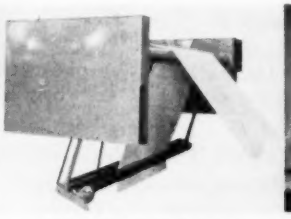
SELVAGE UNCURLERS

Hold selvages open and flat when feeding nip rolls or tenters—for all types and weights of fabrics.



HEAVY DUTY DRAW ROLLS

with adjustable speed drive Ball Bearing mounted rolls, welded steel construction.

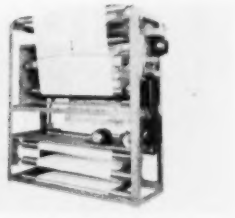


PLAITERS & DRAW ROLLS

Heavy duty unit of welded steel construction. Draw roll type drive for positive safe handling of goods.

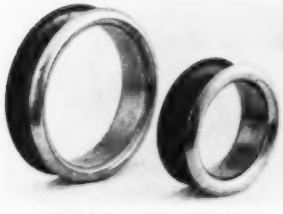
NEW MODEL G CONTINUOUS ROLL FEED

With non-lapping nip rolls for continuous production at high speed on any roll fed machine—new rolls sewed on without stopping.



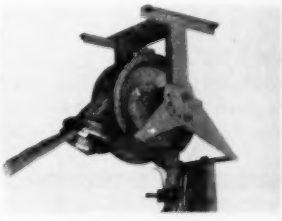
BOWED & SKEWED WEFT STRAIGHTENER

For straightening of bowed and skewed weft yarns. Push button controlled.



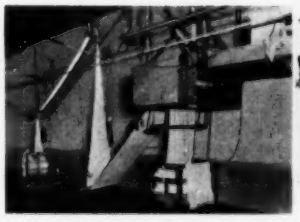
STAINLESS STEEL POTEYES

Strong, light, economical, safe.



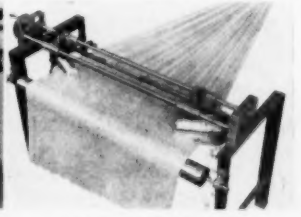
OVERHEAD SHEAVE

Carries goods overhead for run ahead of openers—brake tension furnished. Detwister switch controls turning of Automatic Detwister Turn Table.



CLOTH OPENING EQUIPMENT

Provides automatic-no-stop twist-free opening—increases production—reduces cost.



HORIZONTAL OPENING

Cloth can be opened from rope-up, down, horizontal or any angle of run.

COMPLETE INFORMATION ON ALL MACHINERY ILLUSTRATED AVAILABLE ON REQUEST.

IOI ENGINEERING VERSATILITY

Specializes in the Design and Fabrication of Processing Equipment to meet *Your* Specific Requirements

IOI Coating and Handling Systems for

TEXTILES
PAPERS
FILMS
FOILS

For complete information on IOI coating and handling systems and equipment for textiles, papers, films and foils write for Blueprint for Industry —Part V.

1. PLASTISOL COATING SYSTEMS
The application of high solid vinyls to webs is accomplished with IOI integrated coating, fusing and embossing systems for producing a multitude of end products.

2. ORGANOSOL COATING SYSTEMS
These IOI systems apply organosol dispersions in volatile solvents to webs at high production rates to produce artificial leathers, pressure sensitive tapes, book cover cloths, etc.

3. HYDRASOL COATING SYSTEMS
For the application of water dispersions of various resins, such as vinyls, rubbers or neoprenes, to various webs for such uses as paper backup for tapes, decorative papers or industrial fabrics.

4. IMPREGNATION SYSTEMS
For the continuous saturation and impregnation of one or several webs under complete process control using polyesters, latices, varnishes and silicones—for many important industrial products.

5. CONTINUOUS EMBOSSING SYSTEMS
For handling and engraining heavy coated papers or fabrics with a wide range of embossed patterns. Single or double roll units are available for embossing independently or in combination with coating systems.

6. LAMINATING & COMBINING SYSTEMS
Many end-use materials are combinations of different webs. These IOI systems laminate multiple plies of different webs to produce a laminated material of special characteristics for the packaging industry.

7. POLYETHYLENE SHEETING SYSTEMS
IOI's full width polyethylene film sheeting systems include extrusion machine with sheeting die, cooling and attenuation units, edge slitters and takeups. Sheeting from 4 mil and heavier are economically produced.

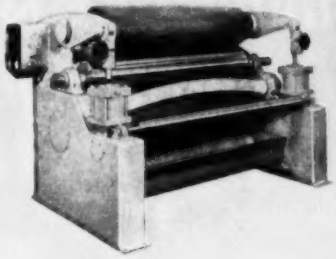
8. POLYETHYLENE LAMINATING SYSTEMS
IOI systems continuously laminate extruded polythene sheet to paper at high speeds to produce grease-proof and moisture-proof packaging materials for bags and containers.

9. PILOT PLANT SYSTEMS
IOI makes available several basic equipment arrangements for pilot or laboratory coating of any fabric or web. Complete systems are available in standard sizes for webs from 15″ to 28″ wide.

INDUSTRIAL IOI ENGINEERING VERSATILITY **OVENS, INC.**
13825 TRISKETT ROAD CLEVELAND 11, OHIO

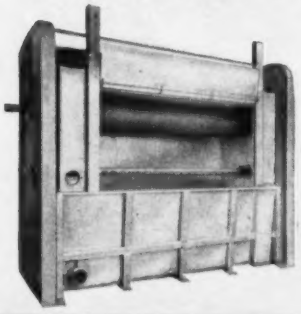
WIESNER-RAPP J-BOX
with features for the duPont Process

3 ROLL PADDER
with Air-set and Dynamometers



WIESNER-RAPP J-BOX
with features for the Becco Process

Stainless Steel
TIGHT STRAND WASHER



QUALITY TEXTILE FINISHING
calls for
W-R MACHINES AND EQUIPMENT

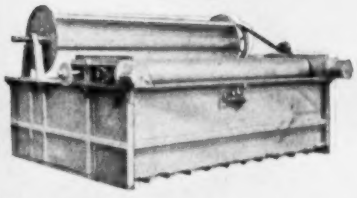
Modern textile finishing demands highly functional machinery and equipment that is able to perform economically with a minimum of maintenance.

Wiesner-Rapp machines and equipment of stainless steel are designed to beat this challenge—good reason why they are first choice of a steadily increasing number of America's largest textile finishing plants.

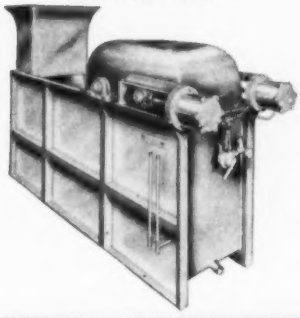
It will pay you to investigate the outstanding features of the machines and equipment of the W-R line.

Write today for descriptive literature, or if you wish to send us your specifications we will be glad to supply your requests.

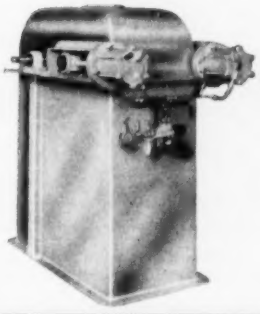
Stainless Steel
SLACK WASHER



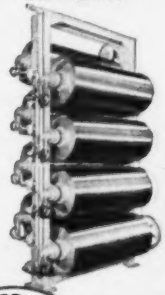
Stainless Steel
SATURATOR



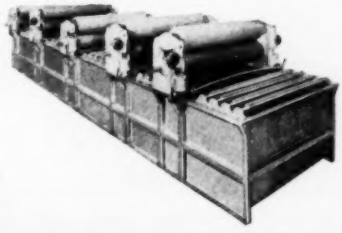
Stainless Steel
SQUEEZER



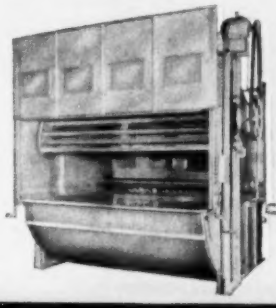
Stainless Steel
DRY CANS



5 STAGE CAUSTIC SHRINK
AND RINSE MACHINE



Stainless Steel
PIECE DYE KETTLE



THE WIESNER-RAPP CO., INC.
Buffalo, New York

THE WIESNER-RAPP CO., INC.
1600 SENECA ST., BUFFALO 10, N. Y.
Manufacturers of Textile Finishing Machinery

Stienen Obermaier DYEING EQUIPMENT

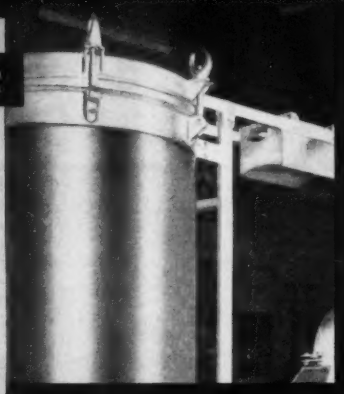
Trade Mark (Reg. Trade Mark)

FAMOUS THE WORLD OVER

NOW BRINGS YOU THESE NEW DEVELOPMENTS

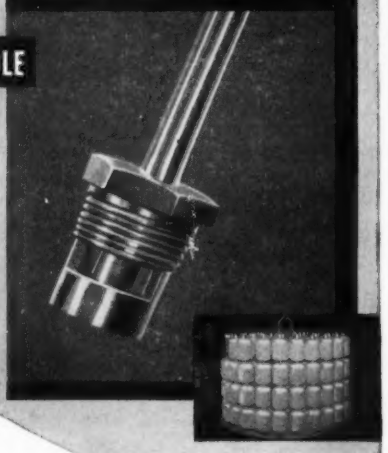
HIGH SPEED DRIER

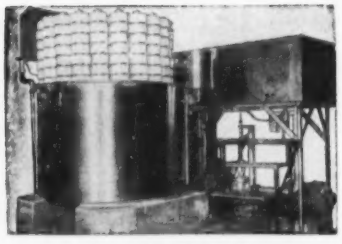
Reduces extracting and drying into a combined Ninety (90) minute operation.



PACKAGE DYE SPINDLE

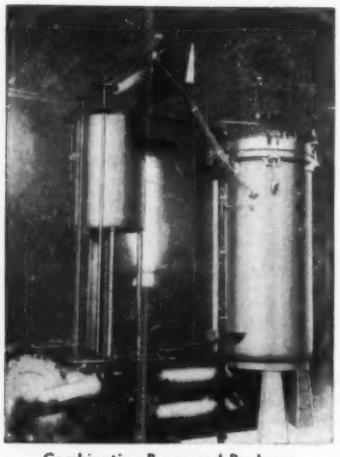
Revolutionary, new construction, indestructible, allows maximum flow with minimum resistance for perfect dyeing.



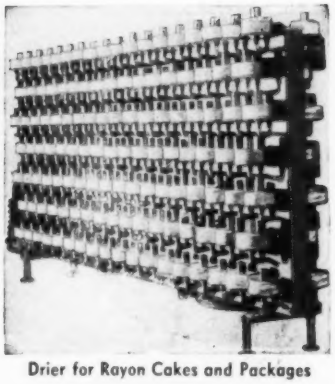


Rayon Dyeing Machine
For Cakes or Packages

Wool Dyeing Machine
For Raw Stock, Tops, Packages



Combination Beam and Package
Dyeing Machine. Capacity up to 2000 lbs.



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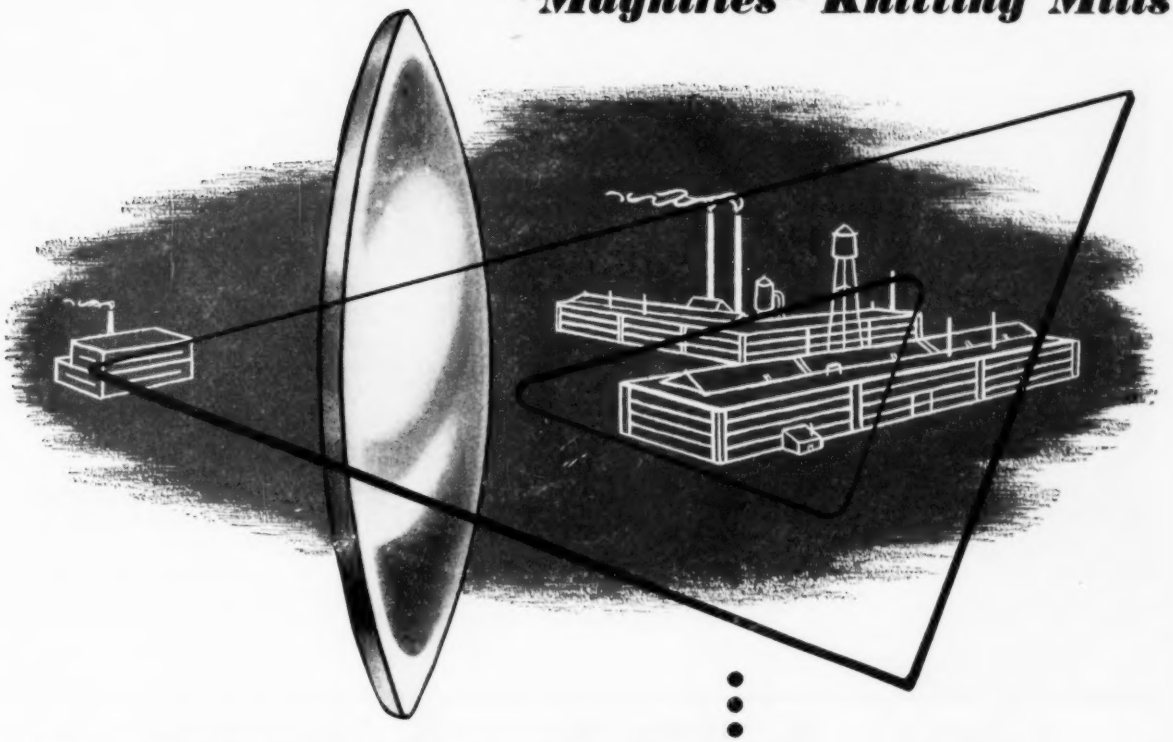
355 Walton Avenue • New York 51, N. Y.

BUILDERS OF

Cotton, rayon and wool dyeing machines extractors and dryers for beams • skeins packages • raw stock • dye spindles • perforated tubes • centrifugal pumps

HOW SUPREME ENGINEERING

"Magnifies" Knitting Mills



Without adding one inch of actual floor space, Supreme's engineering makes knitting mills bigger in output capacity . . . bigger in production versatility . . . bigger in profit-knitting power.

How? Supreme does this by creating knitting machines that *multiply* a mill's *knitting-ability*.

Look into the modern Supreme line. In model after model you'll find multi-machine fabric versatility and production rates that "magnify" a knitting mill in its customers eyes.

You'll also see the basic construction features that assure long-lived, low-maintenance operation. These standardized features give all **Supreme's** a family resemblance that simplifies life for your knitter-mechanics.

Write, wire or phone today for complete information on any of the Supreme's shown on this page.

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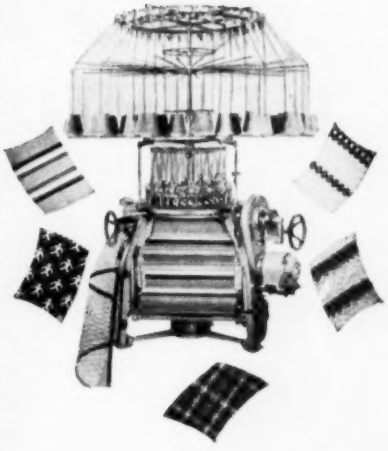

For example—Here's Model LT/SAAF "A ONE-MACHINE KNITTING MILL"—This automatic variable striper and pattern placer machine knits a tremendous variety of Terry and Jersey fabrics at terrific production rates. Switches easily from one to the other.

SK-162

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STOP GUESSING ! ! BE RIGHT-ALWAYS USE "TENSION-RITE" DEVICES ON ALL TYPES OF FIBRE & ALL KINDS OF YARN

HOW MUCH IS IT WORTH TO YOUR COMPANY? COMPARE FOLLOWING DATA:

COSTS ON XD & XK DRAPERS IN "TENSION-RITE" CONTROLLED MILLS CAN BE;

SHUTTLE TENSION IS MEASURED by a dial that shows the exact tension in grams. The removal of the filling from the shuttle simulates exact loom conditions.

IF YOUR *SHUTTLE FUR COST* WAS *CUT IN HALF* $5.00 per loom per year
IF YOUR *SHUTTLE COST* WAS *CUT TWO THIRDS* $5.00 per loom per year
IF YOUR *LOOM LEATHER COST* WAS *CUT IN HALF* $7.50 per loom per year
IF YOUR *DAMAGED REED COST* AND *REED MARKS* WERE PRACTICALLY ELIMINATED THESE ITEMS *ALONE* CAN SAVE UP TO $75.00 per loom per year

FOR *BEST* MECHANICAL PERFORMANCE ON LOOMS, SHUTTLE TENSION *CONTROL* IS A M-U-S-T. *EACH SHUTTLE MUST BE CHECKED WEEKLY TO EXPOSE TELLTALES OF UNNECESSARY WEAR* & NEGLECT. "TENSION-RITE" OPERATOR AVERAGES 300 IN 8 HOUR PERIOD.

SUPERVISORS AND *FIXERS NOW HAVE* POSITIVE MEANS OF *SHUTTLE TENSION CONTROL* WITH *"TENSION-RITE" SYSTEM OF FOLLOW-UP* WHICH REDUCES DOWNTIME AND RAISES QUALITY UNATTAINABLE BEFORE. PORTABLE, USED IN MFG. PLANTS & RESEARCH LABORATORIES.

THIS IS BEING DONE BY USERS OF *"TENSION-RITE"* AS DESCRIBED IN SEPTEMBER 1952 ISSUE OF "TEXTILE WORLD"

ARE YOUR COSTS AS LOW AS THOSE QUOTED ABOVE? IF NOT, CAN YOU AFFORD TO BE WITHOUT "TENSION-RITE"?

For complete information, write

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"TENSION-RITE", THREAD FRICTION TESTING DEVICES built and licensed under Serial and Patent #2,407,545 with other patents pending.

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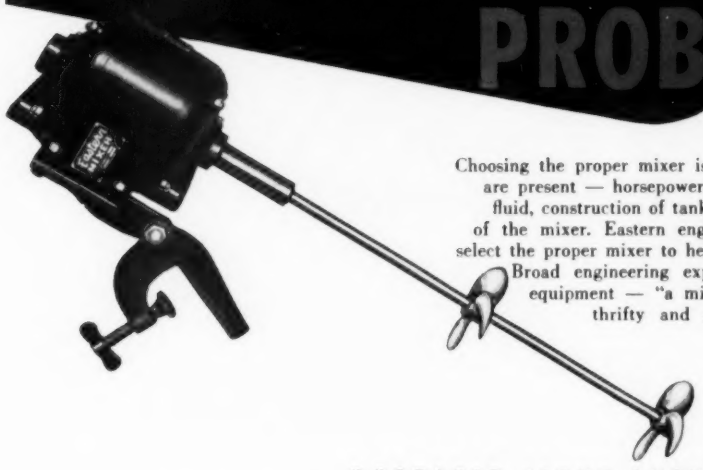
RAWHIDE LOOM PICKERS

GARLAND MFG. CO.

SACO MAINE

NEED HELP SOLVING A MIXING PROBLEM?



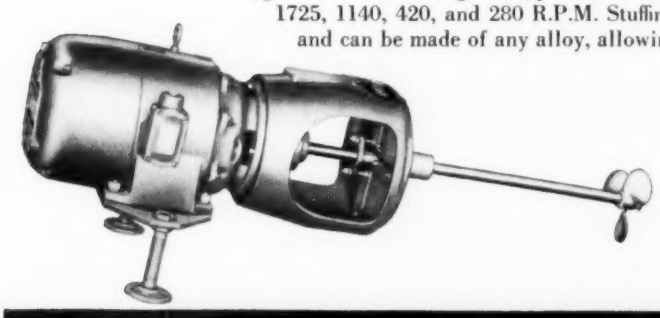
Choosing the proper mixer is a specialized task. Many variables are present — horsepower and speed of mixer, consistency of fluid, construction of tank, as well as mounting or installation of the mixer. Eastern engineers are at your service to help select the proper mixer to help solve any problem you may have. Broad engineering experience backed by a full line of equipment — "a mixer for every job" — guarantees a thrifty and efficient solution to your problem.

PORTABLE LIGHT-DUTY MODELS

Various models are available at different speeds and H.P. dependent upon the consistencies of fluids and the type of tanks used. All models are available with single or dual propellers and shafts of various alloys. Motors can be furnished from 1/20 — 5 H.P. in various currents and voltages and can be either semi-enclosed, totally-enclosed, or explosion-proof. Air driven and variable speed models are also available. Mounting may be by screw clamp, swivel clamp, or bracket for permanent installation.

SERIES C HEAVY-DUTY MODELS

These versatile Top & Side Entering Mixers are applicable to a wide variety of specialized needs. They're designed for tanks needing agitators with a range of ¼ to 10 H.P. at standard speeds of 1725, 1140, 420, and 280 R.P.M. Stuffing box is a separate part and can be made of any alloy, allowing lower original cost.



CATALOGS ON REQUEST

Both catalogs offer valuable data on choosing a mixer. Request Catalog Series 11.

EASTERN INDUSTRIES MIXER DIVISION

Eastern INDUSTRIES, INC.

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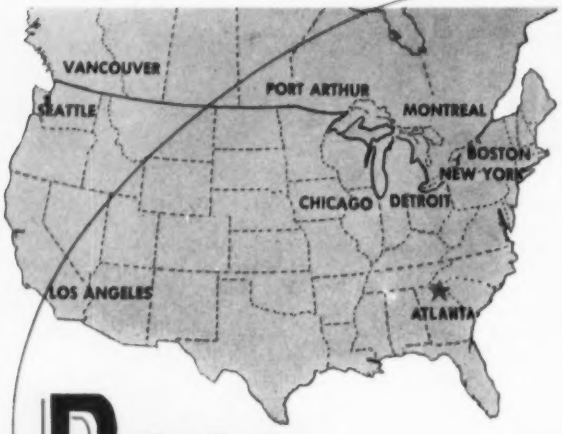

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In our new and modern plant we have adequate facilities for supplying your pin and lag requirements.

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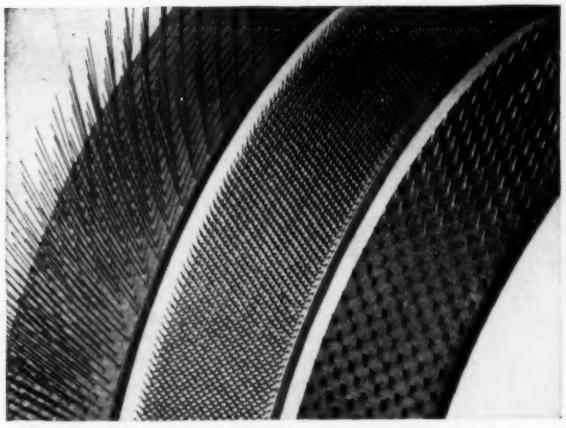

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PLATT'S PATENTED METALLIC WIRE in place of flexible clothing for cotton, wool, worsted and rayon cards. Increases production; eliminates grinding.

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smooth, rapid acceleration positive needle control

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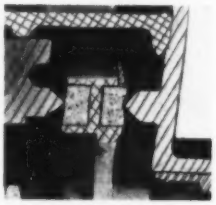

Double surface action of AMCO's patented dual taper clutch and brake assures instant starts and stops with positive needle control.

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The only specialists in the field of power driving equipment for industrial sewing machines

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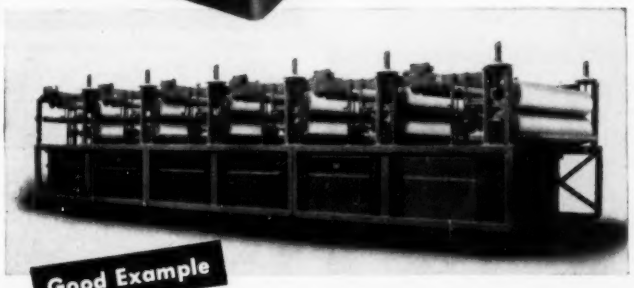
Four specially designed SEALMASTER ball bearing units for use on textile machinery. Each unit retains all of the exclusive features of the standard SEALMASTER line. Housings are designed to meet machine manufacturers' specifications.



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FOR FINE YARN PROCESSING

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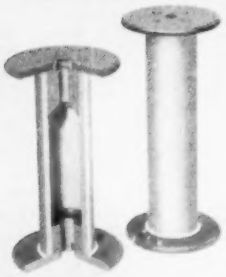

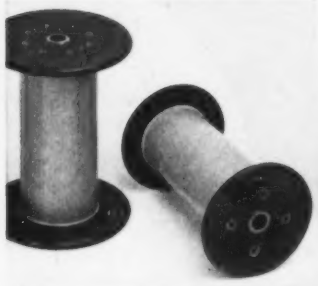

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Loop Cutting Machines
Railway Sewing Machines—Butt and Chain Stitch
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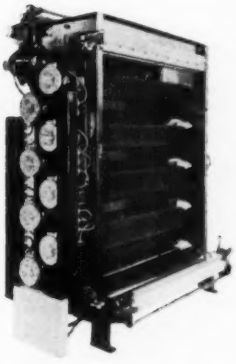

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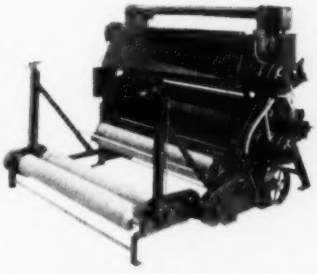
- Metal core renewable bristle brushes.
- Quick adjustment for brushing pressure.
- Brush rolls individually motor driven with electric brake for instantaneous stopping.
- Vacuum system removes brushings from machine.

AV SHEAR



Shears perfectly all types of cloth to within 8 inches of seams, removing all hanging threads from front, back, and both selvages in one pass through the machine at speeds up to 150 yards per minute.

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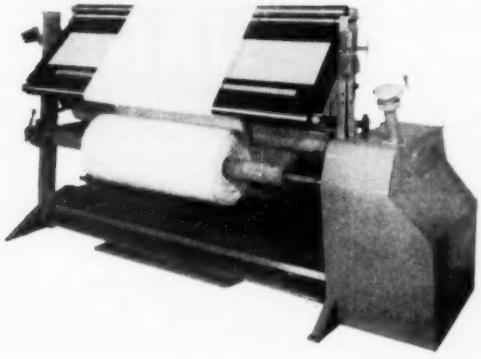
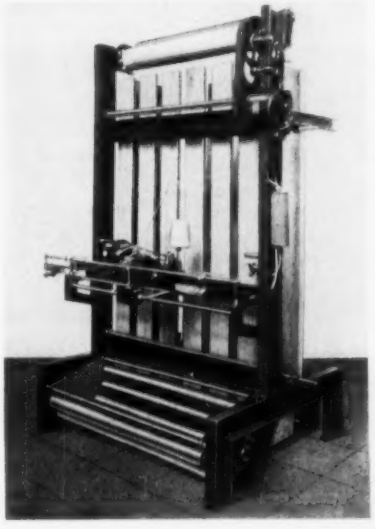


J-BOX SEWING and FEEDING MACHINE

For continuous feeding of cloth through shear, brush, or other machines. Sews single pieces together on railway sewing unit.



You can make these . . .

and thousands of other distinctively designed sweaters on the

NEW QUEENS TANDEM CARRIAGE

FULLY AUTOMATIC LINKS AND LINKS (PURL STITCH) KNITTING MACHINE

Faster, Easier, More Versatile and Less Expensive to operate than any other type of flat Links and Links machine

These days you want more for your money when you buy a knitting machine—and you certainly make every penny count when you pick the new QUEENS Tandem Carriage Machine. Because embodied in this advanced design model are all the well known QUEENS features, plus many new advantages.

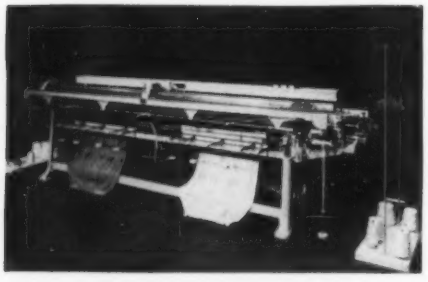
FASTER—Faster carriage travel—greatly increased rate of production.

EASIER TO OPERATE—Only 2 stitch settings, compared to 8 or more on other machines. Simple snapper arrangement makes design changes possible in a fraction of the time required for other machines.

MORE VERSATILE—Literally thousands of original and varied designs are possible with the Tandem Carriage model—multi-colored float work, true cable and rope stitches, intarsia and simulated embroidery designs, knitted-on Links and Links borders . . . widths or heights of any design can be easily changed by moving the snappers . . . no production time lost due to laying out designs on graph paper, stamping cards and inserting them in the machine.

LESS EXPENSIVE TO OPERATE—Low maintenance cost . . . less needle and jack wear and breakage.

And behind this new machine is QUEENS' 30 year background of responsibility and dependability.



OTHER QUEENS PRODUCTS

- Queens Full Automatic Links & Links Machines (single and double lock, single or double jack)
- Queens Double Head Flat Border Machine
- Queens Circular String Border Machine
- Queens Hand Operated Links & Links Machine
- Queens Hand Operated Flat Machine
- Queens Power Operated Flat Machine
- Needles, Jacks, replacement parts

All Queens Machines are fully covered by United States and Foreign Patents.

QUEENS MACHINE CO.

280 Starr St., Brooklyn, N. Y. **EV. 6-0020**

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for all weights of hosiery

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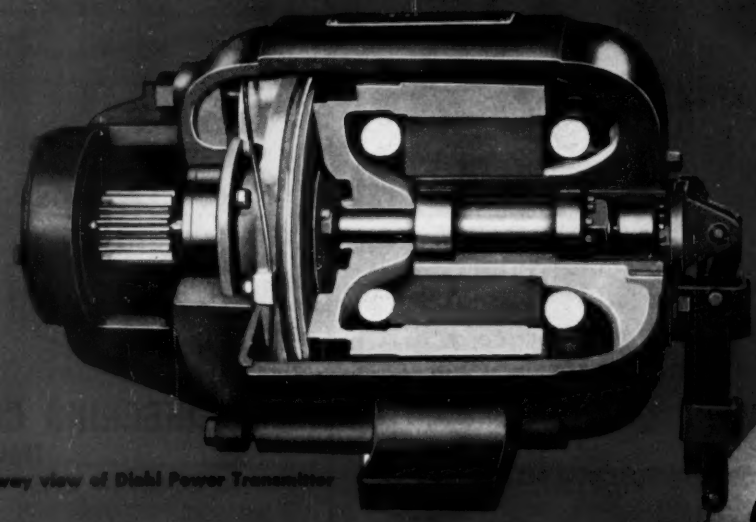
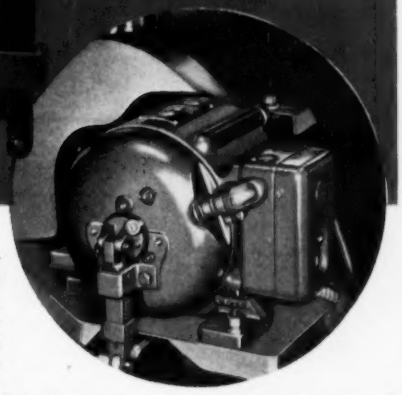
AND
SPECIAL APPLICATIONS

Diehl POWER TRANSMITTER FOR YOUR LOOMS

. . . assures maximum weaving speeds with peak operating efficiency!



Cut-away view of Diehl Power Transmitter



Note the *inverted rotor,* which revolves around the outside of the stator on a hollow shaft. Provides the essential high inertia without the mechanical disadvantages of a separate fly wheel.

Pinion driving shaft, to which clutch plate is fastened, passes through hollow rotor shaft and is shifted axially by simple lever at front end of motor, thus controlling clutch engagement pressure and eliminates thrust bearing on the loom.

Cork friction rings are mounted on both sides of clutch plate, which may be shifted by shipper handle linkage to contact either the rotor or cast iron brake shoe, thus starting or stopping the loom.

The Diehl Power Transmitter is a unit comprised of an inverted high inertia motor, a clutch and a brake – integrated to provide a compact "power package" that meets the industry's need for ample, consistent power with instantaneous precise operating control.

Leading textile mills are using thousands of Diehl Power Transmitters on looms made by the DRAPER CORPORATION of Hopedale, Mass. – many of which have been in continuous use for as much as five years!

Mill men are enthusiastic about the advantages derived from the use of the Diehl Power Transmitter, including . . .

- "Stored power" for smooth, rapid starts and positive picking.
- Precision Braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Lack of current regeneration.
- Simplicity and ease of maintenance which has resulted in increased work loads for fixers and weavers at many mills.

. . . all of which adds up to increased *mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.*

We will welcome an opportunity to tell you – without obligation – how the Diehl Power Transmitter can bring these benefits to you.

2198

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

FINDERNE PLANT, SOMERVILLE, NEW JERSEY

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Textile and Dyestuff manufacturers

rely on **ATLAS**

FADE-OMETERS

LAUNDER-OMETERS

for speed and dependable results in research and for quality control in production. Products that must be guaranteed —

- not to, deteriorate or fade easily under sunlight.
- against loss of color or shrinkage from laundering or dry cleaning.
- against colors bleeding in laundering.
- for permanence of fungicides, fire-proofing, moth-proofing and other finishing agents.
- and other deteriorating effects of light and laundering.

More is required of modern fabrics than ever before if they are to stand up in competition today. The Atlas Fade-Ometer and Launder-Ometer will give you dependable test results in a minimum of time and at minimum cost.

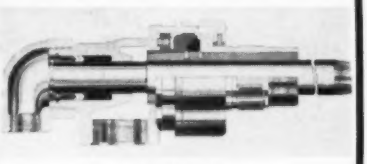
Write for information on the new Atlas Scorch Tester for testing damage due to chlorine retention.

ATLAS ELECTRIC DEVICES COMPANY

361 West Superior Street, Chicago 10, Illinois

WEATHER-OMETERS • FADE-OMETERS • LAUNDER-OMETERS

STEAM JOINTS THAT COMPENSATE FOR ROLL EC-*CENTRICITY WITHOUT STRAIN*



TYPE YR

All sizes from ½" to 5" inc.

STATIONARY OR ROTATING SYPHON

ROTHERM ENGINEERING CO INC.

7280 W. DEVON AVE.

CHICAGO 31, ILL.

NU-LINE PLASTIC PRODUCTS FOR HOSIERY MILLS

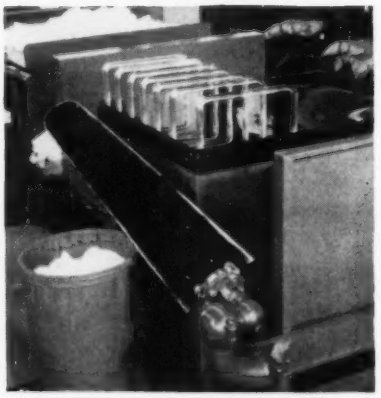


Illustration above shows our Inspection Form, Separation Racks, and Plastic Table

"Custom Plastic Fabricators for the Hosiery Trade"

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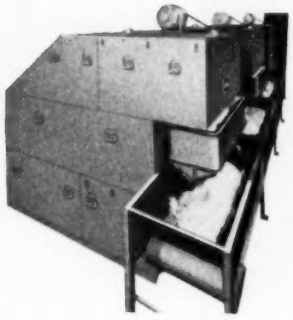
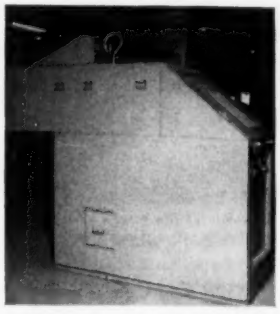
TEXTILE EQUIPMENT CORPORATION SUBSIDIARY

Manufacturers of Textile Machinery and Supplies



AUTOMATIC BLENDING MACHINERY

The FIBER METER Automatic Blending System has proven its accuracy and dependability in over 50 leading mills on all types of fibers. Complete engineering survey of your requirements incurs no obligation.

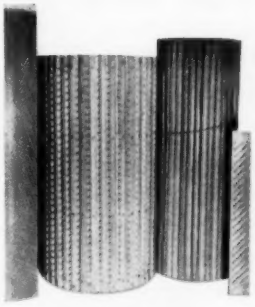


ENCLOSED COTTON FEEDERS

Sturdy, ¼" steel plate, fully enclosed feeders in all widths. Completely equipped with motors and adaptable to automatic weighing when desired. The most modern feeder available today.

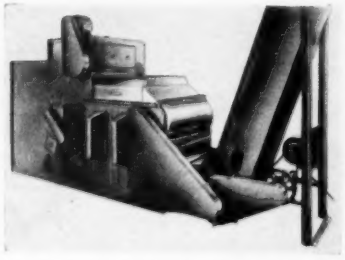
OPENING & CLEANING MACHINERY

Six beater, steel TEMCO Cleaner. Available with grids for cotton cleaning, aluminum bed for synthetic opening and blending, and with removable grid covers for easy change from cotton to synthetics.



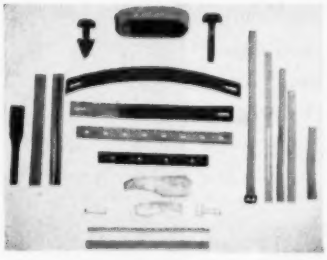
APRONS AND LAGS

A complete selection in all sizes of spiked and slatted aprons and beater lags for any model machine. Center cut, leather belting and maple slats assure long life and superior performance.



TINTING MACHINERY

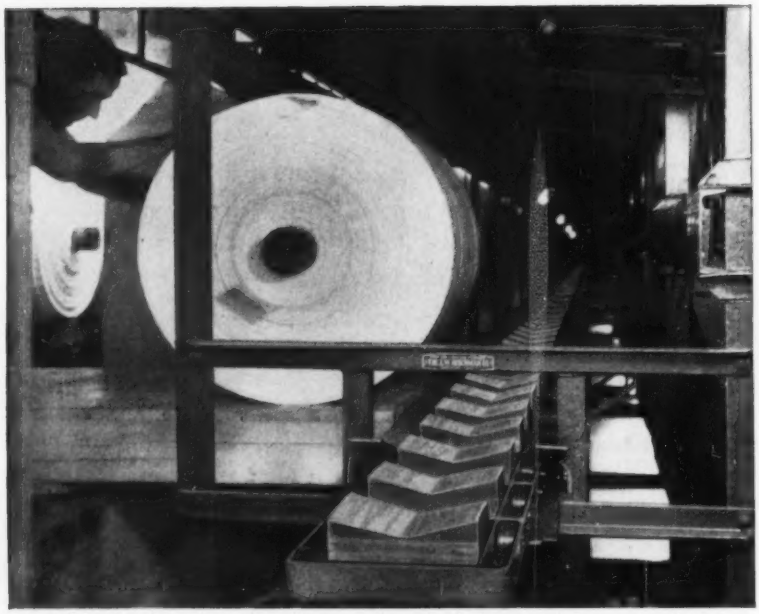
The UNITINT machine offers a practical solution to the problem of applying accurate, uniform tints of soluble dyes to textile fibers. Heavy gauge steel with completely enclosed, stainless steel tinting chamber.



LOOM SUPPLIES

Sixteen years of quality production at prices that spell true economy in loom operation—Loom and Harness Strapping—Check Straps—Spindle Bumpers—Woven Strapping—Binder Leather—Anti-friction Dobby Loops—Leather Specialties—Transmission and Conveyor Belting.

We also manufacture a wide range of belt conveyors, inclined conveyors, automatic reversing feed tables and rake distributors. Quotations to your specifications on request.



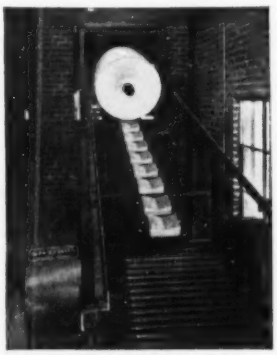
Individual dollies with wooden v-blocks are driven by single strand chain, carrying 400 lb. rolls of white cloth from bleaching to printing operations in different buildings.

BUSCHMAN CONVEYORS
deliver the goods
between buildings for Southern Bleachery

Replacing costly trucking, this Buschman Conveyor provides a steady flow of bulky cloth rolls between buildings at the Southern Bleachery and Print Works, Inc., Taylors, S.C. The design and trouble-free operation of the conveyor prove the skill and experience of Buschman Engineers in economical solution of widely varied handling problems.

Put your handling problem up to an experienced organization for satisfactory solution. Write today for literature showing "standard" and "engineered" conveyors and machinery for all industries.

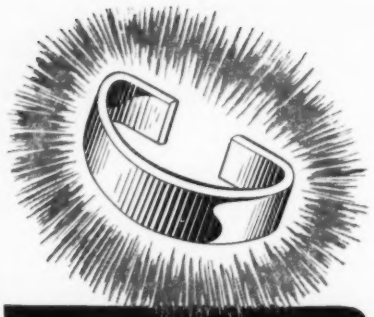
Representatives in principal cities



Unique Buschman Engineered design permits *both* changes in vertical elevation and horizontal direction, unusual in a continuous pallet type conveyor.

PRODUCE MORE ... FOR LESS with Buschman Conveyors

THE E. W. BUSCHMAN COMPANY
4468 CLIFTON AVENUE
Cincinnati 32, Ohio
Canadian Licensee: J. A. McKechnie Ltd., Toronto 13, Canada



DARY
Ring Travelers

WELCOME TRAVELERS!

The welcome sign for Dary Ring Travelers has been up in spinning and twisting rooms for well over 50 years!

Dary users know they can depend on steady performance regardless of the tough tests they give Dary Travelers.

So, welcome your Dary Ring Traveler man the next time he stops by!

DARY Ring Travelers
Always specify

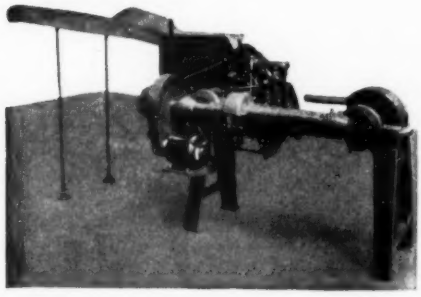
THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY L. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

The TERRELL MACHINE COMPANY Inc.

CHARLOTTE, N. C., U.S.A.

BOBBIN BOX HOIST
(Shown with Type L Machine)

The Bobbin Box Hoist lifts and dumps boxes of bobbins into a large hopper at the machine feeding level. This reduces handling of quills, lowers costs, and eliminates manual effort and injuries due to lifting heavy quill containers. Also used with Type K Machine and Termaco Roving Bobbin Cleaner.



THE TYPE K

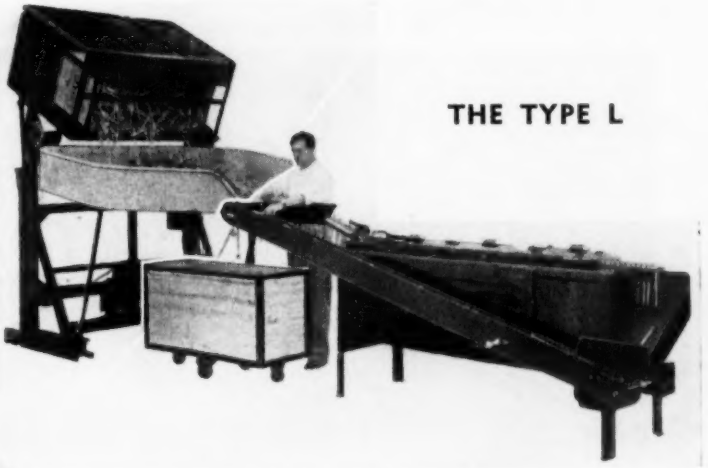
The Type K removes filling waste from quills by stripper blades actuated by cams. The quills are pushed through the blades, which have positive and accurate adjustments to provide efficient cleaning and protect quills from damage. Used for cleaning spun synthetics, wool and cotton yarns from plain finished automatic loom bobbins.

TERMACO ROVING BOBBIN CLEANER

Cleans 2000 to 35000 roving bobbins per hour, depending upon method of handling bobbins around the machine, and speed and skill of the operator.

Reduces roving waste through definite control. Reworks waste without damage to staple.

Avoids knife cuts on bobbins and injuries to employees.

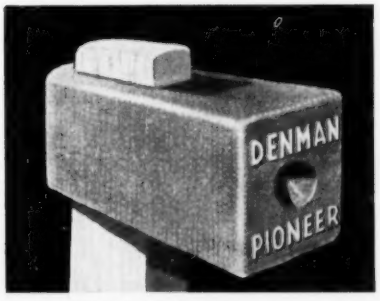


THE TYPE L

Compressed air, supplied from an independent source, forces the yarn ends to engage brushes on unwinding reels which remove the waste, eliminating any possibility of damage to the quills being cleaned. The Type L is recommended for synthetics, wool and most cotton work.

The output of the Type L and the Type K is approximately the same, depending upon the quill handling method used, etc. The number of quills cleaned per machine, per operator, varies from approximately 3000 to 6000 per hour.

DENMAN *Pioneer* LOOM PARTS



SWEEP STICKS
LUG STRAPS
all sizes
AND
OTHER
SPECIALTIES

LOOP PICKERS

1—Individually molded for uniformity of size, weight and resiliency. Smooth, rounded front and top edges eliminate hanging filling. Longer lasting Denman Pickers mean longer shuttle life, longer stick life, higher weaving efficiency, lower costs.

2—All Denman Reversible Pickers are individually molded and are EXACTLY ALIKE, assuring constant loom settings throughout your weave room with a minimum of loom adjustment. Another reason Denman gives you lowest picker costs per loom per year.

REVERSIBLE BOX
LOOM PICKERS

Southeastern Agents for
ECONOMY BALING PRESSES
Made by Economy Baler Co., Ann Arbor, Mich.

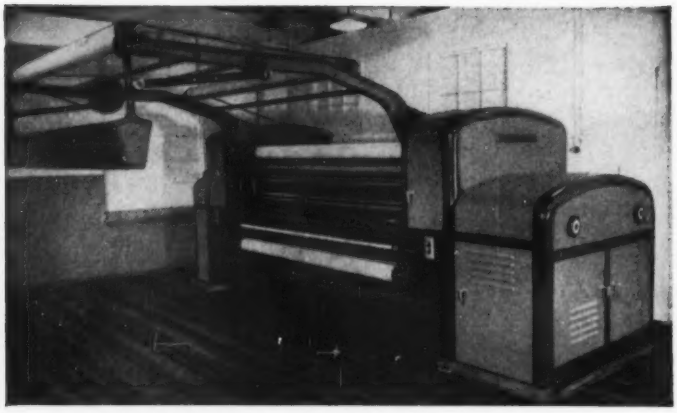
The Terrell Machine Company
Exclusive Sales Agents
Denman Textile Parts

For more information, write direct or use Reader Service post card.

Eliminate the Guesswork!

CONTROLLED NAPPING

is here



90-inch, 24-roll double-action napper

Announcing

A NEWLY DESIGNED NAPPING MACHINE which simplifies this important step in cloth finishing. Take the old trial and error methods out of your napping room by investigating the 12 features listed below which add up to increased production and lower costs.

- completely safe operation
- less lubrication down time
- improved fabric protection
- complete fabric versatility
- elimination of guess-work
- redesigned enclosed drive and gears
- ease of cleaning
- negligible lint and fly problem
- simplified changes of cloth speed
- anti-friction bearings
- no change gears
- easily changed to single acting

Get the Best – get a NEW SIMPLEX

Write today

DAVIS & FURBER MACHINE CO.

NORTH ANDOVER, MASS.
CHARLOTTE, N. C.

Please let us have more information on the new Davis & Furber Napper.

*Name*_____

*Position*_____

*Company*_____

*City*_____ *State*_____

SAVE TIME...

in solving your daily Mill Problems with

Mill Reference Data Section

of this

BUYERS' GUIDE

and

REFERENCE DATA

Issue

Its Exclusive Features Include:

- **YARN NUMBER CONVERSION TABLE**
- **LOOM-PRODUCTION TABLE**
- **KNITTING PRODUCTION TABLE**
- **PRACTICAL MILL CALCULATIONS**
- **FORMULAS FOR ENGINEERS AND MASTER MECHANICS**
- **pH CURVES OF COMMON ACIDS, BASES AND SALTS**

Get in the habit of using this reference. You'll find it invaluable in your work!

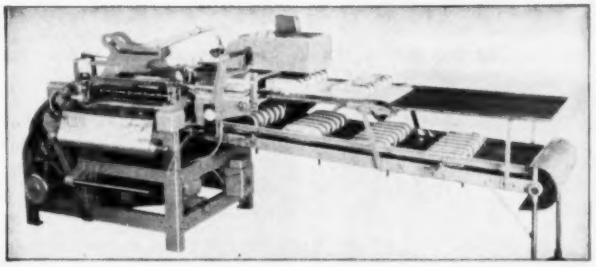
HAYSSEN MFG. COMPANY

Since 1910, One of the World's Largest Manufacturers of Wrapping Machines

DEPT. TWG-53, SHEBOYGAN, WISCONSIN

WRAP ALMOST ANY SHAPE OR SIZE PRODUCT AUTOMATICALLY WITH A HAYSSEN ...SAVE HALF YOUR MACHINE COST

ADD EXTRA BUY APPEAL TO
Cheese Cloth, Curtains, Bolts of Fabric, Handkerchiefs, Hosiery, Pillow Cases, Sheets, Shirts, Towels, Underwear, Yarn ... practically any textile product.



● The Hayssen wraps 35 or more packages per minute with one operator . . . gives EXTRA PROTECTION FOR YOUR PRODUCT. You'll have a neat, tight, uniform package with electric-eye registration of the printed overwrap.

Hayssen Wrapping Machines handle heat-sealing cellophane, pliofilm, polyethylene and paper. These textile machines wrap the product by itself or with cartons, trays, flat cards and u-boards as required . . . handle the most delicate, fragile or fluffy materials.

Hayssen machines are unmatched in performance, low first cost, overall economy of operation and maintenance. Many Hayssen units are in use today that were purchased over 20 years ago.

WRITE for folder on Hayssen Wrapping Machines. Tell us your wrapping problems ... we have the answer.

IT PAYS TO WRAP THE HAYSSEN WAY

Hayssen MFG. COMPANY

BOULIN INSTRUMENT CORPORATION

65 Madison Avenue, NEW YORK 16, N. Y.

Manufacturers of Mechanical Tachometers

Visutac — the Visual (Stroboscopic) Hand Tachometer

For quick and convenient determination of rotary, reciprocating and vibratory speeds from 500 to 32,000 CPM, from a distance and without contact. Visutac weighs 11 oz. measures 3" x 3", is accurate within ±2% of true speeds, requires no wiring or electrical current is equally effective under bright sunlight or artificial light.

Invaluable for safely measuring very high speeds and speeds of inaccessible moving parts, Visutac permits limited observation of cyclic motion and more accurate determination of speeds of low powered mobiles than "contact Tachometers" as it imposes no load. Made in two basic ranges 500 to 8,000 and 1,000 to 16,000 RPM-VPM.

Lyons — Chronometric Hand Tachometer (Speed Indicator)

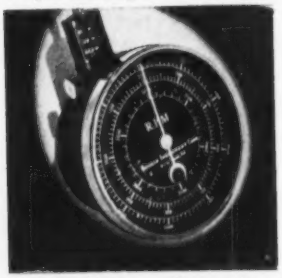
Most precise of all mechanical tachometers for measuring constant speed, the Lyons consists of a sturdy timing mechanism preset to measure exactly three seconds, automatically synchronized with a geared revolution counter, both enclosed in a compact aluminum housing.

Exceptional readability is insured by a 2¾" dial bearing 500 graduations and hands that stop and remain in position following indication, until returned to zero. The error limit of the Lyons is well within ½ of 1% of true speeds. Readings require less than 10 seconds.

Stocked in three ranges, each with 100% overspeed allowance.

0 to 100 RPM	0 to 1000 RPM	0 to 10,000 RPM
0 to 50 FPM	0 to 500 FPM	0 to 5,000 FPM

Triple Range Centrifgal Hand Tachometers



These heavy duty hand tachometers indicate directly in revolutions and feet per minute regardless of the direction of rotation or linear motion and register both constant and fluctuating speeds instantaneously, responding to the slightest variations as they occur.

The mechanism is not affected by magnetism, humidity or change in temperature and operates on ball and oil-less bearings. Being pre-lubricated, Boulin Centrifugals require no attention. Error limit is ± 1%.

Stocked in the following ranges:

Type 0	4" dial	300-1200,	1000-4000, 3000-12,000
Type 0-1	4" dial	300-1500,	1000-5000, 3000-15,000
Type 0-2	4" dial	100-1200,	400-4000, 1000-12,000
Type 0-3	3" dial	50- 500,	500-5000, 5000-50,000

Single Range Centrifugal Hand Tachometers

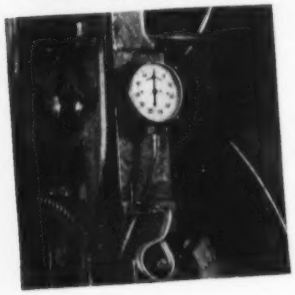
These sturdy Tachometers are similar to the Triple Ranges described above, except that they have only one scale and no gear shift. They are supplied in carrying cases with five accessories for measuring rotary speeds. A rubber tired wheel for direct measurement of FPM can be furnished if desired.

The ruggedness and simplicity of operation of these direct registering, instantaneous indicating Tachometers, eliminate the frequent and costly repairs associated with delicate instruments and make possible their use by unskilled operators.

Stocked in 4" dial size, in the following standard ranges:

No. 1	100-1200 RPM	No. 4	300-3600 RPM
2	500-2500 RPM	5	350-4000 RPM
3	200-2400 RPM	6	400-4800 RPM
No. 7	1000- 5000 RPM		
8	1000-10000 RPM		
9	50- 500 RPM		

Stationary Centrifugal Tachometer



This instrument can be calibrated to indicate in revolutions, feet or yards per minute or in units of production, such as bags, blades, cigarettes, bottles or shells per minute.

By providing constant visible indication, stationary tachometers make it possible to determine operation at the rate of optimum efficiency, to permit the maximum safe speed or to insure absolute uniformity of processing.

Standard installations usually consist of a tachometer head for panel mounting connected to the drive shaft of the machine by means of a flexible shaft, split gear and pinion bracket assembly.

All Boulin Centrifugal Tachometer connections being SAE (Marine) standard, machines provided with outlets of corresponding dimensions can be economically fitted with suitable tachometers.

Pulley driven tachometers are also produced in a variety of models, dial sizes and ranges to suit most requirements.

This is your

BUYERS' GUIDE

If you need a

PRODUCT

or a

SERVICE

turn to the

CLASSIFIED LIST SECTION

for name and address of supplier.

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SERVING THE TEXTILE INDUSTRY SINCE 1899

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Precision Paper Products

Paper Carriers *for every* TEXTILE NEED

CONES—
with various surfaces and identifying marks.

TUBES—
for extra textile use.

DYTEX TUBES—
for trouble-free package dyeing.

CORK COTS

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UNDERCLEARER ROLLS AND COVERS

CARD CLEARER ROLL COVERS

CORES SPOOLS

SPINNING BOBBINS and other TEXTILE SPECIALTIES

Sonoco Products Company

MAIN OFFICE—HARTSVILLE, S. C.

MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT. LOWELL, MASS.
PHILADELPHIA, PA. AKRON, IND. GARWOOD, N.J. GRANBY, QUEBEC

DEPENDABLE SOURCE OF SUPPLY

sonoco
SERVES THE WORLD
PAPER CARRIERS
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teamwork

makes the difference in

"american" bobbins

the finest quality is not enough

W. Bourassa
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you get the services of this team

G. Winslow
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L. Samson
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who are men of long experience and a broad understanding of textile problems, and are able to give you straightforward answers to all inquiries and to see that your specifications are closely and understandingly followed, from start to shipment. Their aim is to make sure that you get exactly the bobbin you need, at a fair price, consistent with the quality and service that gives you the most for your bobbin dollar.

american bobbin co.
lewiston, maine

Whether it's

ABSORBENT-COTTON
PROCESSING MACHINES

or

ZINC COMPOUNDS

if it's used in

a Textile Mill

you'll find it

listed in the

CLASSIFIED
LIST SECTION

of this

BUYERS' GUIDE

along with

names and addresses

of suppliers

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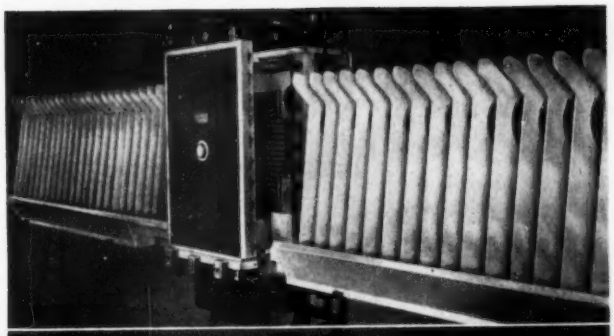
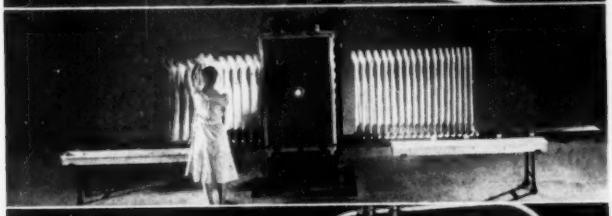
TURBO
SINCE 1929

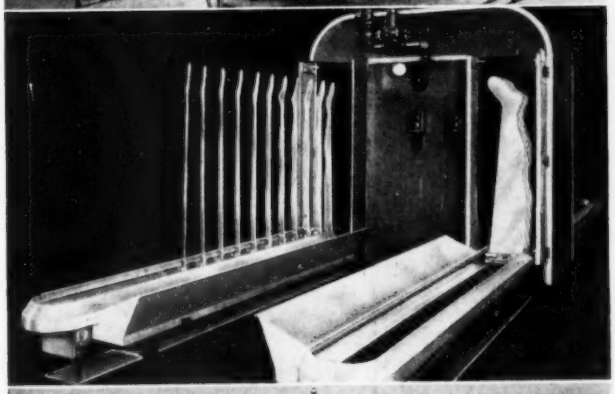
TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.

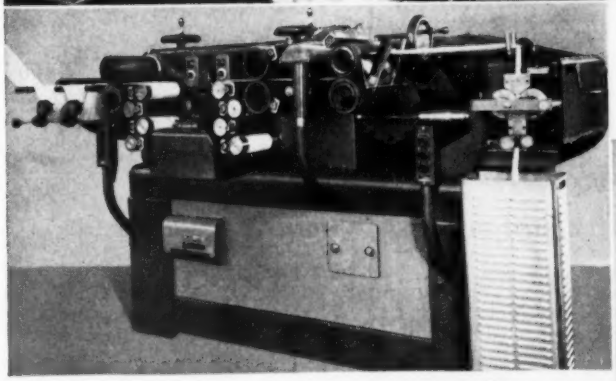
Southern Representative: F. W. Warrington Co., Charlotte, N. C.

Manufacturers of precision hosiery finishing machinery, also Crimpers, Crimp Setting Equipment, and Tow Processing Equipment.









TURBO CRIMPER, Right. For nylon and other synthetic fibers. Only 54 inches high, takes floor space 18 inches by 20. Sturdily made for heavy-duty use. Maximum crimping speed: 350 feet per minute. Pressure and degree of crimp are instantly adjustable. Interchangeable crimping wheels as required.
TURBO CRIMP SETTER, Far right. Precise, accurate and automatic. Sets 200 to 250 pounds of crimped staple per hour. No guesswork, timing is automatic. Operator merely loads and unloads the carriers. Available with 2 or 3 can carriers. 8 feet high, 5 feet six inches wide and 11 feet long. Uses a minimum amount of steam.

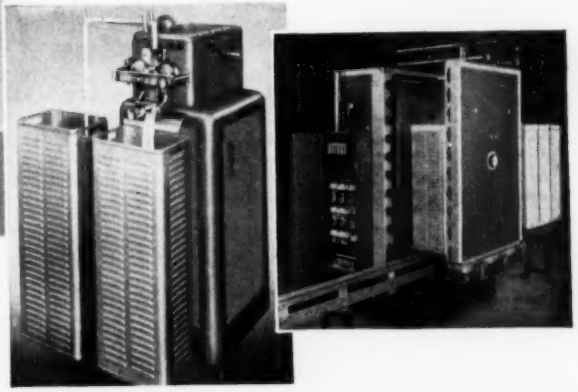
TURBO AD-48. For preboarding, finish boarding or a combination of both. Circulating hot air keeps temperatures steady. Has a production rate of from 120 to 130 dozen pairs per 8-hour day, with only one operator. Gentle as a lamb—no jolting, no banging—stockings are always safe. Easily changed one-piece leg forms interchangeable with all Turbo boarding machines.

TURBO PREBOARDER. Requires only one operator. Has a production rate of from 120 to 160 dozen pairs per 8-hour day. Automatic or semi-automatic action. Stockings remain upright, no creep, no slip. Ample spacing between leg forms for complete inspection.

TURBO FINISH BOARDER. Fast and gentle. 90% of air is recirculated in the chamber, prevents air from getting too dry, *stops static*. Stockings are easier to handle. Minimum steam consumption. Two operators can board up to 250 dozen pairs of perfectly finished stockings in an 8-hour day.

TURBO STAPLER takes tow up to nine inches wide—heats it to remove all crimp, and reduce denier if desired—reduces the tow to staple and replaces any desired degree of crimp. The Turbo Stapler works automatically, without skilled labor. Depending on fiber denier it can produce up to 125 pounds of fine, soft sliver with a wonderful hand. Open-sided construction and easily reached controls allows quick change over to any synthetic fiber. Doubling, drafting and roving operations are drastically cut. Finished yarn can be produced at about ½ the capital investment of conventional systems. The Turbo Stapler, based on the Perlok System, is easy to operate, easy to service.

Write for complete information and catalogs. All Turbo products are backed by a quarter-century experience in building precision machines.



For more information, write direct or use Reader Service post card.

- CARD ROOM BOBBINS
- AUTOMATIC LOOM WARP CONES
- ROLLS AND TWISTER BOBBINS

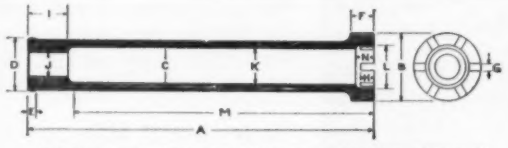
B H

Complete Product From Log To Finished Bobbin

Polished, oilproof finish inside and out. Branded on ends with date of manufacture.

BOWEN-HUNTER bobbins are made of Vermont rock maple, birch and beech, as ordered. We recommend rock maple as it is harder, more durable and, being closer grained, absorbs less moisture, insuring a minimum of variation in size with atmospheric changes.

BOWEN-HUNTER bobbins are manufactured in an atmosphere of the same relative humidity as obtains in the card room and are accurate within the closest tolerances attainable in the working of wood.



To insure against variation in successive orders of bobbins, it is best to order from drawings.

If your bobbins do not conform to standard dimensions, we will be glad to provide drawings of your bobbins without cost or obligation to you.

Saco-Lowell Standard Roving Bobbins

TRAVERSE	A	B	C	D	E	F	G	H	I	J	K	L	M	N
12×6	13½	2⅛	2	2⅛	1¼	⅜	7/32	⅜	1⅛	23/32	1⅛	1 15/32	12	½
11×5½	12½	2⅛	1 15/16	1 15/32	-	-	-	-	1¼	-	1 5/16	1 15/32	11⅛	-
10×4½-5	11½	1 15/16	1⅝	1⅝	1¼	-	-	-	-	23/32	1⅛	1⅜	10⅛	-
9×4½	10½	-	-	-	-	-	-	-	-	-	-	-	9⅛	-
8×3½-4	9½	-	-	-	-	-	-	-	-	-	-	-	8⅛	-
7×3-3½	8½	1 15/16	1 7/16	1½	1	-	-	-	1	23/32	1⅛	1 5/32	7⅛	-
6×3	7½	-	-	-	-	-	-	-	-	.633	-	-	6⅛	-
6×2½	-	1⅞	1½	1⅝	-	-	-	-	⅜	23/32	1 5/16	1⅜	6⅛	-

Whitin—Woonsocket Standard Roving Bobbins

TRAVERSE	A	B	C	D	E	F	G	H	I	J	K	L	M	N
12×6	13 3/32	2 1/16	1 3/8	1 49/64	1 1/4	3/8	7/32	3/8	1 1/8	23/32	1 1/8	1.286	12 3/32	1/2
11×5½	12 3/32	-	-	-	-	-	-	-	-	-	-	-	11 3/32	-
10×5	11 1/16	1 1/8	1 3/16	1 1/8	1 1/8	-	-	-	1 1/8	.789	1 1/8	1.234	10 1/16	-
9×4½	10 1/16	-	-	-	-	-	-	-	-	-	-	-	9 1/16	-
8×3½-4	9 1/16	1 1/16	1 1/8	1 1/16	-	-	-	-	-	.695	1 1/16	1.203	8 1/16	-
7×3-3½	8 1/16	1 1/16	-	-	7/8	1/2	-	-	-	.680	31/32	1.133	7 1/16	-
6×3	7 1/16	-	-	-	-	-	-	-	-	.680	-	-	6 1/16	-
6×2½	-	1 1/16	1 1/16	1 1/16	-	-	-	-	-	.566	.930	1.031	-	-
5×2½	6 1/16	-	-	-	-	-	-	-	-	.570	.863	1.039	5 1/16	-

CARD ROOM BOBBINS

Orders should specify, kind of wood, the style of base (plain, wired, or shield), number of slots or notches in base, style of tip (smooth or beaded).

If bobbins are ordered to sample, send spindle, bolster and gear to insure proper running fit. It will be returned with the shipment.

AUTOMATIC LOOM, WARP AND TWISTER BOBBINS CONES, ROLLS AND TUBES

Orders should specify, kind of wood, finish, shields or bushings if required, height of stand on spindle and be accompanied by Spindle, Bolster and Holder complete, and Blueprint or 2 Sample Bobbins.

BOWEN-HUNTER BOBBIN CO., Inc.
EAST CORINTH, VT.

Factories
EAST CORINTH, VT. WESTFIELD, VT.
WEST TOPSHAM, VT. WARREN, VT.

Southern Representatives
ODELL MILL SUPPLY COMPANY
GREENSBORO, N. C.
GREENVILLE TEXTILE SUPPLY CO.
GREENVILLE, S. C.

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BUYERS' GUIDE

designed for your reference needs.

Its exclusive Features Include:

- **MILL REFERENCE DATA SECTION**
- **CLASSIFIED LIST SECTION**

LOOK it OVER . . .

KEEP it HANDY . . .

USE it OFTEN . . .

GUARD it CAREFULLY . . .

Next issue will not be out until November of next year!

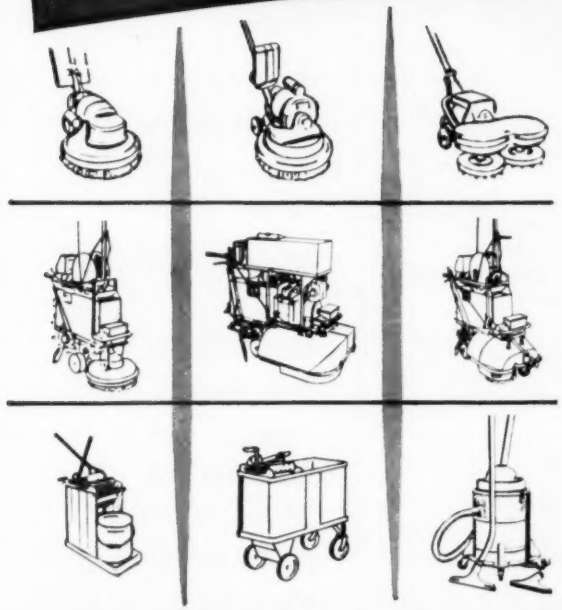
When buying, or requesting product information, be sure to mention TEXTILE WORLD'S BUYERS' GUIDE

Keep your floor-maintenance men happy . . .

with *Job-Fitted* EQUIPMENT!

Choose from the COMPLETE *Finnell* Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1911B East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

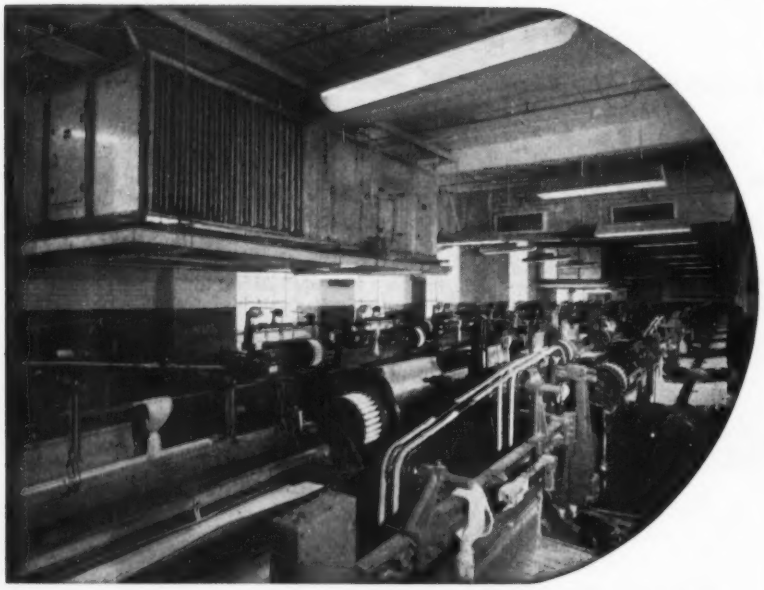
Originators of Power Scrubbing and Polishing Machines

50th Anniversary — Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

WHITE & COMPANY

everything . . . in air conditioning for the textile industry



Synthetic yarn weaving room with new WHITE suspended air washers in Grendel plant of The Abney Mills, Greenwood, S. C.

Highly technical as it is, industrial air conditioning has always been the work of specialists. White and Company has closely followed each new development in the air conditioning field and passed the benefits along to the foresighted mill operators who have steadily increased their profits with WHITE air conditioning.

With 25 years' experience designing, installing and servicing air conditioning for the Textile Industry, White and Company is prepared to install in your plant any of the following air conditioning systems:

1) CENTRAL STATION with REFRIGERATION
2) CENTRAL STATION with AIR WASHERS
3) DRY DUCT UNITS with ATOMIZERS
4) JACKSON Automatic Self-cleaning ATOMIZERS

Write for Free Descriptive Brochure

Estimates and specifications furnished without obligation.

WHITE AND COMPANY, INC.

AIR CONDITIONING • HUMIDIFYING • VENTILATING • HEATING

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SAVE TIME...

in solving your daily Mill Problems with

Mill Reference Data Section

of this

BUYERS' GUIDE

and

REFERENCE DATA

Issue

Its Exclusive Features Include:

- YARN NUMBER CONVERSION TABLE
- LOOM-PRODUCTION TABLE
- KNITTING PRODUCTION TABLE
- PRACTICAL MILL CALCULATIONS
- FORMULAS FOR ENGINEERS AND MASTER MECHANICS
- pH CURVES OF COMMON ACIDS, BASES AND SALTS

Get in the habit of using this reference. You'll find it invaluable in your work!

NATIONAL RING TRAVELER CO.
AND
STERLING DIVISION

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Pawtucket, R. I.
Tels. Pawtucket 3-7720-21

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Charlotte, N. C.
Tels. Charlotte 2-5542 7-4352

STANDARD IN U.S.A.

AMERICAN • HICKS • WILSON

SQUARE POINT TRAVELER

Wide, Regular & Narrow Style

For Flange 1 rings:
Circles 8–½–9/16–⅝–¾–⅞–1–1⅛
For Flange 1⅛ and 2 rings:
Circles ¾–⅞–1–1⅛–2–3–4–5–6–7
For Flange 2⅛ and 3 rings:
Circles 3–4–5–6–7

ROUND POINT TRAVELERS

Wide and Narrow Style

For Flange 1 rings:
Circles ½–9/16–⅝–¾–⅞–1–1⅛
For Flange 1⅛ and 2 rings:
Circles ¾–⅞–1–1⅛–2–3–4–5–6
For Flange 2⅛ and 3 rings:
Circles 2–3–4–5–6

SPECIAL TRAVELERS

For special work and conditions

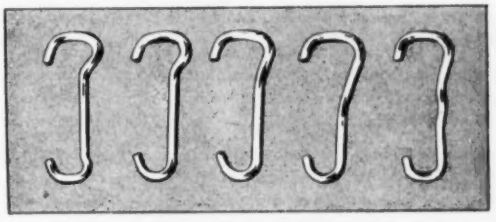
Round Wire
Oval Wire
Elliptic Style
Odd Circles
Extra Narrow & Thick
"Super Traction"
{ P. B. (Perforated Bow) }
{ Double Duty }
Gravity
Gravity Express
Bal-Ellipsoid
Etartnep Finish

These are all fitted to the rings and to the special conditions under which they are to run.

STEEL GRAIN TRAVELERS

Square and Round Point for Dry Twisting on Horizontal Rings
Wide and Narrow Styles

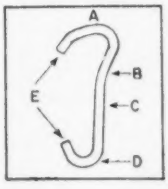
For Flange: 2–2½–3–3½–4–4½–5–6–7–8–9–10
Circles: to fit rings and conditions
Flat, Round and Oval Wire
"Flexile" Travelers



TWISTER TRAVELERS

BRONZE, PHOSPHOR BRONZE, STEEL

To fit 5/16"–⅜"–7/16"–½"–⅝"–⅝"–¾"–⅞"–1"–1⅛"–1¼" depth rings



A *Head*
B *Break*
C *Back*
D *Heel*
E *Horns*

For Best Results these Travelers are made to fit the rings on which they are to run.

The Horns are made long enough to hold the Traveler on the ring but not so long that the Traveler is bent out of shape when being put on the ring, nor must the HORNS come in contact with the rail or holder when in motion.

The Head must be large enough for the yarn and knots to pass thru freely and must also balance the Traveler so that it will run in a correct position.

The Break in the BACK depends on the type of ring and also affects the position in which the Traveler will run.

The Heel must be made to the thickness of the ring and allow for freedom in running.

Made of round, oval or flat wire.
Flat Oval—Wire that is flattened slightly on the oval.
Oval, Flat Center—Oval wire that is flattened in the Back at the point of contact to the ring.

PAWTUCKET, R. I.
354 Pine St.

Frederic L. Chase, Jr.	Pres. & Treas.
Raymond V. Borden	Plant Mgr.
Henry A. Carter	Representative
Robert M. Leach	Representative
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D. C. Creech	Representative
D. R. Ivester	Representative

Leighton Machines in various models are especially adapted for the Sportswear trade

Leighton Circular Knitting Machines

The most versatile machine made for *seamless* sweater fabrics. The big outer dial knits soft spun yarns with less end breakage.

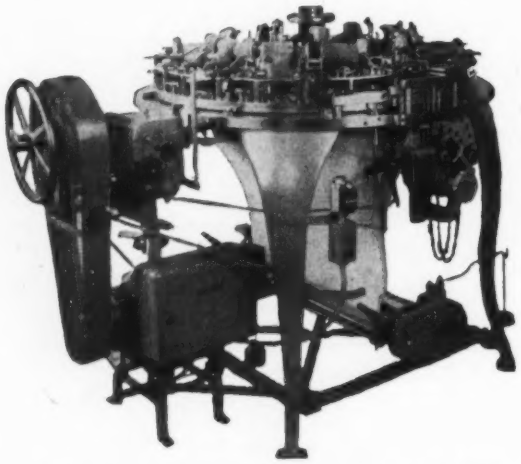
Leighton features small sizes for infants and children that are seamless. No cutting. No sewing.

Leighton machines are custom-built with multiple feeds, two-speed control, two and three color stripes, and attachment for brushing fabrics as they are knit.

Other Leighton machines:—Three Needle Selective Rack with two or four feeds, Double Needle Rib, Interlock Rib, Girdle Machines.

Pattern wheels, Separating Course, and individual stitch adjustments. Fine or coarse gauges.

Perfect Racked Edges are adaptable to either 1 & 1, 2 & 1, 2 & 2 Cuffs. Seamless sleeves and bodies, large and small sizes.



30" Automatic Transfer Machine—12 Feeds

Two-speed Motor Drive with electrical control system. Entirely automatic. Eliminates wear, simple to operate, no lag or lost time in shifting speeds.

New Striper Arrangement is fully assembled and may be readily attached or detached to each feed. Drum style with polished and hardened drum screws. Easily adjusted and located to give the desired striper selection—2, 3, or 4 finger striping on each feed.

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

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CA=Q

The formula for quality **STAINLESS STEEL** valves & fittings

Quikupl

Fittings

Accessories

Valves

As the world's largest producers of cast stainless steel valves, fittings and castings, Cooper Alloy offers unparalleled facilities for mass production and controlled quality. From the drafting board to the foundry, from the machine shop to the inspection floor products from Cooper Alloy are under the supervision of craftsmen with years of training and experience especially geared to the handling of stainless alloys.

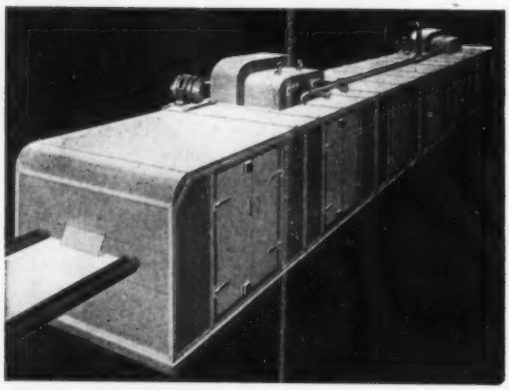
THE **COOPER ALLOY** FOUNDRY CO., HILLSIDE, N. J.

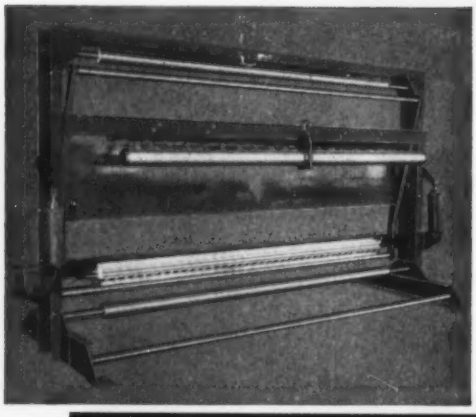
LEADING PRODUCERS OF **STAINLESS STEEL** VALVES, FITTINGS AND CASTINGS

TEXTILE DRYING, CURING and SINGEING EQUIPMENT

IHE TENTER DRYERS

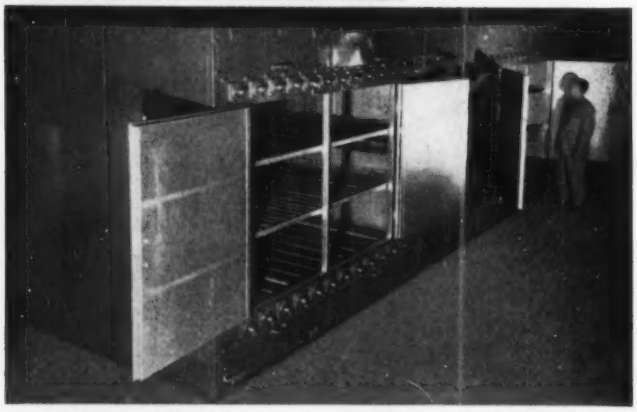
I.H.E. Tenter Dryers are made for frames of any width, and in lengths from 20-ft. to 100-ft. Direct fired, recirculating type, equipped with a system of nozzles designed to obtain maximum efficiency from the drying gases. Multiple doors give easy access to all parts of interior. Direct firing with gas or oil-gas gives greater capacity per foot of dryer than is possible with steam units.





AUTOMATIC SINGEING MACHINES

Ideal with Rayons, Cottons, Rayon-Cotton blends, Rayon-Wool mixtures and worsteds. Singes closely and uniformly on both sides of cloth in one pass. Speeds up to 375 yards per minute. Can be used in tandem with bleaching, caustic boil-out or mercerizer. Burns oil, manufactured or natural gas. Designed for continuous heavy duty.



CLOTH DRYER

This recirculating type, direct-fired cloth dryer requires only 14-ft. by 8-ft. by approximate width of cloth, with evaporating capacity of 900-lbs. per hour for this size. Burns gas or oil-gas. All sizes available in both suspension and floor type.

RESIN CURING MACHINE

Wide heat range, with ability to maintain any temperature up to 450 F. Cloth heated to control point almost immediately after entering chamber. Clean, efficient heating direct-fired by gas or oil. Forced exhaust removes resin fumes.

Write for complete information today to

Industrial Heat ENGINEERING CO.

121 CLEVELAND STREET, GREENVILLE, SOUTH CAROLINA

Whether it's

ABSORBENT-COTTON PROCESSING MACHINES

or

ZINC COMPOUNDS

if it's used in a Textile Mill you'll find it listed in the

CLASSIFIED LIST SECTION

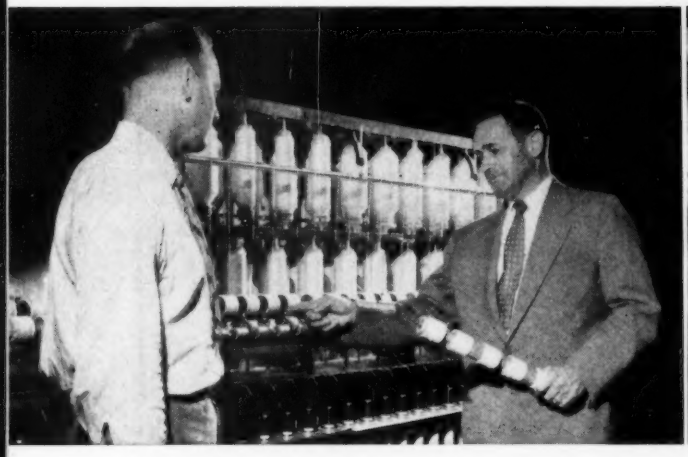
of this

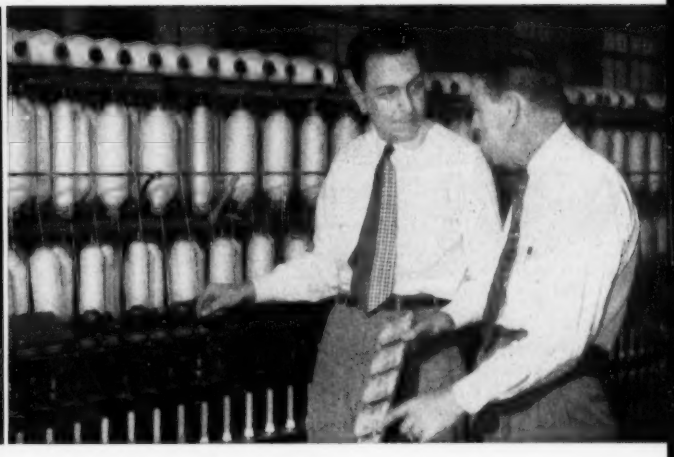
BUYERS' GUIDE

along with names and addresses of suppliers

When buying, or requesting product information, be sure to mention TEXTILE WORLD'S BUYERS' GUIDE

Let your Armstrong man handle





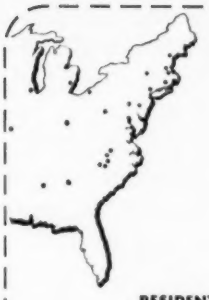
your roll covering-apron problems

Routine or emergency, hundreds of mill men call him regularly

Whether it's a case of changing fibers, installing new equipment, or bringing a re-buffing schedule up to date, many mill men find their Armstrong man a constant source of ideas and help on the roll covering or apron questions that such changes bring up.

Every Armstrong textile representative is thoroughly trained on roll coverings and aprons and, in addition, has years of practical experience to back up his suggestions. And when needed, he can call on the Armstrong research engineers who work regularly with mills and machinery makers on mill problems.

The map at right shows where your nearest Armstrong representative is located. If you're not already doing so, let an Armstrong representative relieve you of your roll covering and apron problems. There's a good chance he can supply the answers you want. In emergencies, a phone call usually will bring him to your mill within 24 hours. Armstrong Cork Company, Textile Products Department, 6711 Dauphin Street, Lancaster, Penna.



DISTRICT OFFICES AT:

Boston, Mass.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Detroit, Mich.
Greenville, S. C.
New York, N. Y.
Philadelphia, Pa.
St. Louis, Mo.

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Rumford, R. I.
Arlington, Mass.
Pittsburgh, Pa.
Decatur, Ga.
Bessemer City, N. C.
Greensboro, N. C.
Charlotte, N. C.
Jonesville, S. C.
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Lititz, Pa.
Birmingham, Ala.

ARMSTRONG'S TEXTILE PRODUCTS

Accotex Cots • **Accotex Aprons** • **Cork Cots** • **Mill Supplies**

LOWELL Shuttles

DOGWOOD OR PERSIMMON
FIBRE-COVERED OR PLAIN

1. Shuttle for carpet loom 2. Shuttle for automatic wool or worsted loom 3. Shuttle for plain worsted loom 4. Shuttle for automatic cotton loom (equipped with brass threader) 5. Shuttle for automatic cotton loom (equipped with cast iron threader) 6. Shuttle for silk or rayon loom (equipped with Paterson tension and fibre covered on one side)

LOWELL SHUTTLES, widely recognized for their quality for more than half a century, include automatic and non-automatic types for all kinds of textile fibres and mills. Lowell Fibre Covered shuttles prevent roughing-up of yarns and the covering is applied to stay. The wood is thoroughly seasoned, carefully dried and finished to specifications. Shuttles can be furnished with automatic tension eyes, if desired.

WRITE FOR LOWELL SHUTTLE CIRCULAR

LOWELL SHUTTLE COMPANY
Established 1896 • Incorporated 1914
15 TANNER ST. LOWELL, MASS., U. S. A.
SALES REPRESENTATIVES
Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald and Somerset Sts., Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

THIS IS THE

BUYERS' GUIDE

designed for your reference needs.

Its exclusive Features Include:

- **MILL REFERENCE DATA SECTION**
- **CLASSIFIED LIST SECTION**

LOOK it OVER . . .

KEEP it HANDY . . .

USE it OFTEN . . .

GUARD it CAREFULLY . . .

Next issue will not be out until November of next year!

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HERR MANUFACTURING CO., INC.

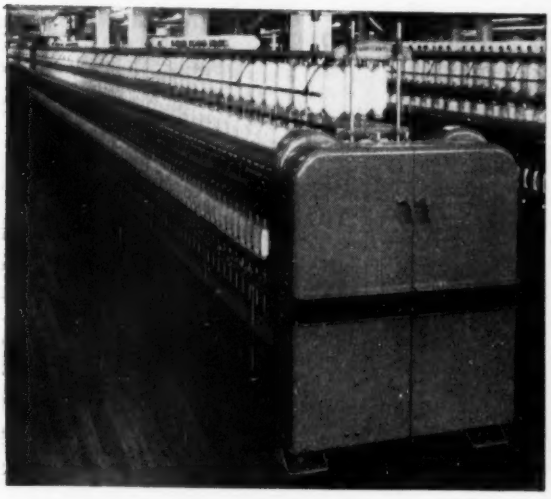
309 FRANKLIN ST., BUFFALO, N. Y.

HERR CONICAL RINGS

The Herr Conical Ring is designed for quality spinning and twisting of woolen, worsted, synthetic and blended yarns of all types. In these applications it will give 100% satisfaction in every way.

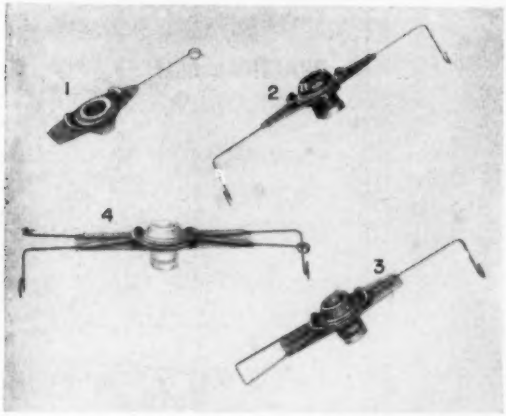
Herr Conical Rings assure satisfaction because:

1. Conical shape produces an outward and downward action with the traveler riding on the top and side face of the ring.
2. Helps reduce yarn breakage and to increase production of higher quality yarn with reduced waste, because the bottom foot of the traveler is kept free to act as a compensating factor to the yarn.
3. Special oil feature provides for absolute control of the flow of oil to the traveler; results in cleaner fabric, minimum oil consumption, longer traveler life, NO rewicking.
4. Constructed of durable drop-forged steel.
5. Mounted in special die-cast holders to accommodate any spinning and twisting rail condition.



1. Insert shows close-up of Herr Conical Ring as installed at Collins & Aikman Corp., Norwood, N. C.

2. Cross-section shows conical shape of ring. Traveler is in position normally assumed at full speed. Heel of traveler does not ride bottom radius of ring.



1. Extra-light weight bobtail; 2. Two-arm, light, long-aluminum base; 3. Three-arm base with bail; 4. Four-arm extra-long heavy brass base.

HERR FLYERS

Herr flyers are made for every mill requirement and are handling every type of yarn, from the finest of hosiery yarns to tire cord. If you have a problem involving a special bobbin, a special spindle, or an unusual yarn, we can design a flyer to fit your needs.

Every Herr flyer is perfectly balanced to assure accurate yarn control. Durable construction and light weight permit high operating speeds. Flyer wires are installed in such a way that they are firmly held and remain permanently in their original positions. Vibration is thus substantially reduced, and uniformity of yarn tension is correspondingly increased. Cleaning and rewiring is reduced to a minimum.

The eccentric, or bearing part of the flyer, is constructed of nylon and requires no lubrication. It can be had in many colors. The latter feature is especially useful for identifying lots and counts of yarns, also for keeping flyers separated by types and spindle sizes and for maintaining flyer wire changing schedules.

TAKE THE **LOAD** OFF YOUR MIND

with **Fairbanks®**

STEEL-FRAMED PLATFORM TRUCKS

Load 'em high...treat 'em rough...Fairbanks steel-framed trucks always come back for more. Tough select oak platform, bolted to a sturdy steel frame, mounted on famous smooth-running Fairbanks swivel casters...give you low cost service, mile after mile, year after year.

Series 21 **LOCK-WELD SWIVEL CASTERS** eliminate the greatest cause of caster failure: the king pin.

Fairbanks Steel-framed **HAND TRUCKS**...a type for every purpose...in every industry.

THE **Fairbanks** COMPANY

393 LAFAYETTE STREET • NEW YORK 3, N.Y.

Branches:

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VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

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in solving your daily Mill Problems with

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REFERENCE DATA

Issue

Its Exclusive Features Include:

- **YARN NUMBER CONVERSION TABLE**
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- **FORMULAS FOR ENGINEERS AND MASTER MECHANICS**
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Get in the habit of using this reference. You'll find it invaluable in your work!

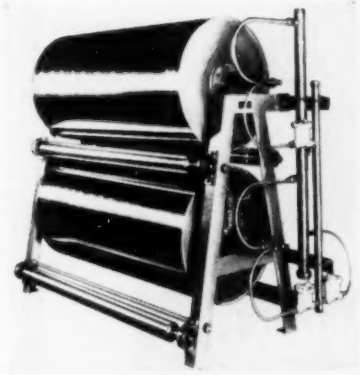
The Textile Shops

Designers and Manufacturers
Textile Metal Products

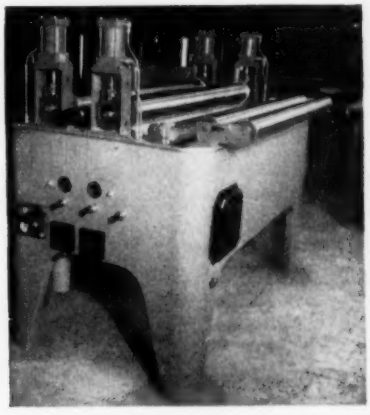
SPARTANBURG, S. C.

Tel. **DIAL 3-6356** **P. O. Box 1330**

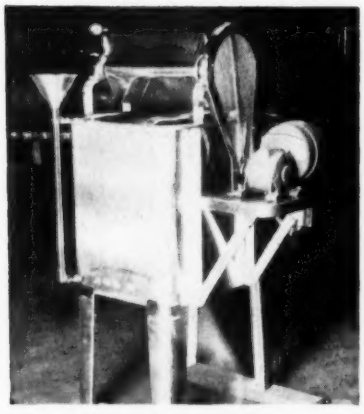
Stainless Steel Size Mixing and Storage Kettles. Also stainless Tanks and Vats.



Stainless Steel Warp Pre-Dryer. Thirty inch diameter by 60 inch face width Cylinders.

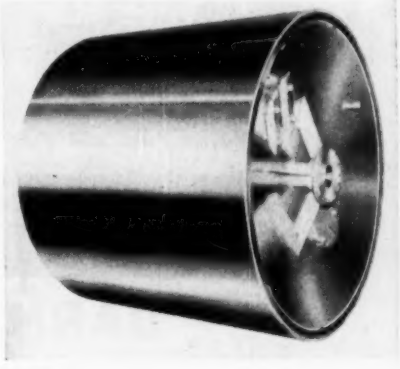


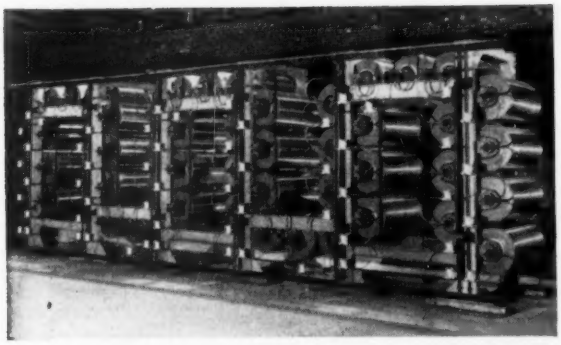
Stainless Steel Newmatic Size Boxes.



← Laboratory Dye Beck—All stainless steel Construction. Capacities from 2 yards to 30 yards. Padders and Contact Dryers are also available.

→ High Pressure Stainless Steel Drying Cylinders. All Welded. ASME Code Construction. Bolted stainless steel and copper Slasher Cylinders are also available.





53 Cylinder Stainless Steel Dryer showing complete piping assembly and chain and sprocket drive. Vee Belt and Gear Drives also available.

PRODUCTS: Card and Picker Screens . . . Spinning Cylinders . . . Vacuum Cleaning Systems for Spoolers, Nappers and Warpers . . . Stainless Steel Hoods and Exhaust Systems . . . Multi-Cylinder Dryers . . . Convection Dryers . . . Resin Curing Machines . . . Slasher Cylinders, Bearings, Journals and Repair Parts . . . Padders, Mangles, Back Sizers . . . Stainless Steel Open width Washers, Soapers and Dyeing Machines and Accessories . . . Stainless Steel and Rubber Covered Rolls of all Types.

Darnell Casters & E-Z ROLL WHEELS

GREATER FLOOR PROTECTION

. . . is but one of the many advantages accruing from the use of precision-made Darnell Casters and Wheels. Add to this—

LONGER EQUIPMENT LIFE

. . . and you benefit from savings that will prompt you to standardize on Darnell products. Employees, too, will appreciate the—

EASY EQUIPMENT MOVABILITY

CASTERS **DARNELL** WHEELS

Always SWIVEL and ROLL

Write for Free Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
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This is your

BUYERS' GUIDE

If you need a

PRODUCT

or a

SERVICE

turn to the

CLASSIFIED LIST SECTION

for name and address of supplier.

•

Bold-face listings indicate that more information will be found on the pages indicated.

•

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LESTERSHIRE SPOOL & MFG. COMPANY

DIVISION OF NATIONAL VULCANIZED FIBRE COMPANY
140 BALDWIN STREET — JOHNSON CITY, N. Y.

BRANCH OFFICES AND TECHNICAL SERVICES:
NATIONAL VULCANIZED FIBRE CO.

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GREENVILLE TEXTILE SUPPLY CO.
Greenville, S. C.

NATIONAL FIBRE CO. OF CANADA, Ltd.
Toronto, Ontario

ODELL MILL SUPPLY CO.
Greensboro, N. C.

PRODUCTS

Standard and special twister bobbins for synthetic and natural fibers.
All Aluminum take-up bobbins, molded bakelite barrel take-up bobbins with or without magazine transfer arrangement.—Jack spools—Pirn caps—Reel caps—Wire spools—Headless take-up packages—Winder tubes.

Today's high tenacity yarns present problems, in both materials and in construction required to resist extreme tension or pressure to which bobbins are subjected.

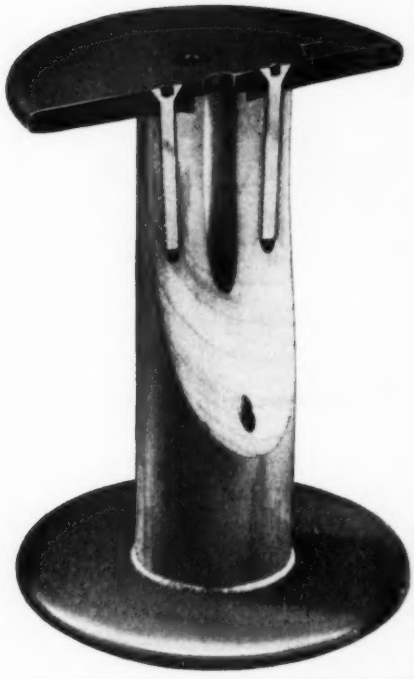
Lestershire is known as a pioneer in the use of "stable" materials in the manufacture of bobbins. Without stability of materials the bobbin cannot be maintained in close concentricity nor can it retain dynamic balance. In high speed, large package bobbins of any type, these two features are essential.

Lestershire is widely known for its effective use of such stable material as aluminum, hard vulcanized fibre and Phenolite (laminated bakelite) in Lestershire bobbins of all types, and for its ability to design regular and special bobbins, especially for use with synthetic yarns.

As a division of National Vulcanized Fibre Company, producers of much of the raw material used in Lestershire bobbins, we have close control of the quality of these materials.

In addition, we have at our disposal the research facilities and experience of National Vulcanized Fibre Company, at Wilmington, Delaware, as well as our own at Johnson City, New York.

LESTERSHIRE
Wood Barrel Bobbin
with replaceable fibre heads



- **The barrels of these Lestershire bobbins are of hard close grain maple that will not dent, chip, or crush.**
- **The heads, of hard vulcanized fibre—the most durable material for the purpose—may readily be replaced without damage to the head or barrel.**
- **The "Anchor Screws" with which the heads are fastened to the barrel are of a patented design that makes a far stronger bobbin. Loosening of the heads under severe conditions is prevented.**

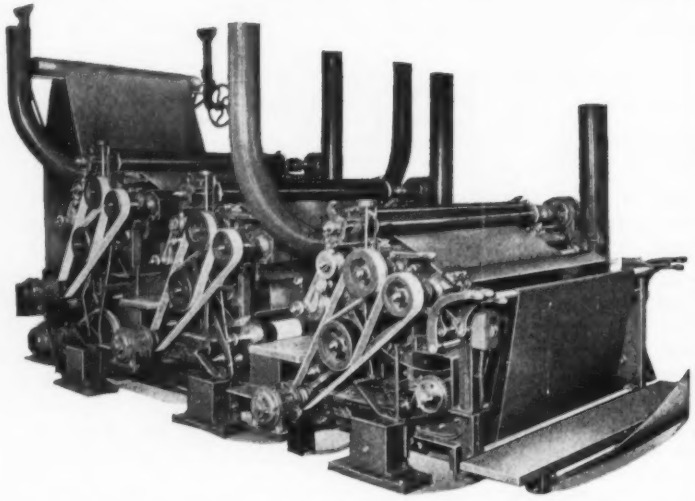
These special "anchor thread" screws maintain maximum holding power. The shallow threads do not disturb the grain of the wood as ordinary screws will do.

Four anchor screws hold three times better than *eight* drive nails. →

Bobbin sliced to show how the shallow thread non-tapered "anchor" thread screws grip the wood with minimum disturbance of the wood fibers.

CONSULT YOUR LOCAL REPRESENTATIVE FOR COMPLETE DETAILS OF LESTERSHIRE BOBBINS.

THE MOST PRODUCTIVE BUT PRECISION SHEAR EVER MADE



DAVIDSON MULTIBLADE SHEAR

For Worsteds, Woolens, Synthetics and Mixed Fibres.

Combines, Sanding and Brushing with close Shearing for Improved Handle, not Harsh as when Singed.

Entirely Automatic to Save Wastage at Sewings or Headings.

Built-in Flock Disposal System. Cloth Speeds up to Sixty Yds. Per Min.

Shears Back and Face at same time. Individual Drives to Fly Blades.

Ball Bearings for all Moving Parts. High Speed Steel in Blade Stocks.

Quick Honing of Knives by one Man in Five Minutes for Better Care.

List Saving Rests for Rolled or Felted Selvedges to Prevent Clipping. Gap or Hollow Rests to Stop Knot Holes.

PARKS & WOOLSON MACHINE CO.

Springfield, **Vermont**

Whether it's

ABSORBENT-COTTON PROCESSING MACHINES

or

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if it's used in

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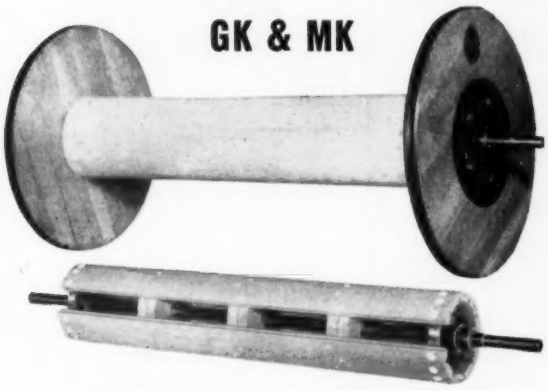
Tel. 9-6451
New Bedford, Mass.

ALLEN BEAM COMPANY

130-156 RIVER ROAD
NEW BEDFORD, MASS.

SERIES "G" & "M" BEAMS FOR ALL MODELS OF HIGH SPEED WARPERS
(SERIES "M" GIANT-PACKAGE BEAMS, HEADS UP TO 36")

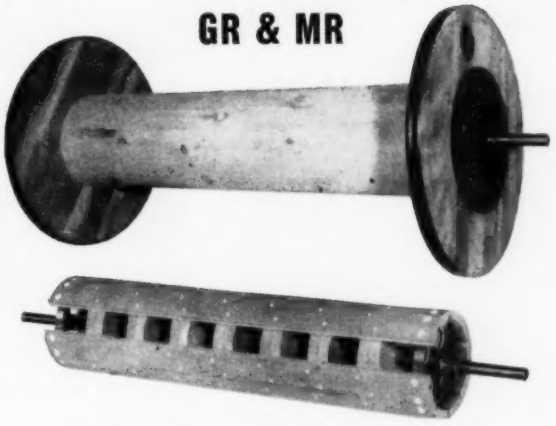
GK & MK



HIGH SPEED WARPER BEAM FOR COTTON YARNS

1. Pine Beam Barrel, with two screws securing each stave at each support.
2. Improved Cast Iron Supports at ends, with hub extending through Beam Heads, providing great strength and shock resistance against rough handling.
3. Three intermediate inside supports of two-ply wood.
4. Standard Allen Wooden Beam Heads of 3-ply hardwood construction, with molded-on tires.
5. Rods holding entire assembly together.
6. Large Reinforcing Plates.
7. Accurately balanced for speeds to 1,000 yds. per minute.
8. All lumber kiln dried.
9. Beam Barrel lengths and Beam Head diameters to suit all warpers.

GR & MR



HIGH SPEED WARPER BEAM FOR VISCOSE RAYON

1. Large diameter pine Beam Barrel with two screws securing each stave at each support.
2. Improved Cast Iron Supports at ends, with hub extending through Beam Heads, providing great strength and shock resistance against rough handling.
3. Seven intermediate inside supports of two-ply wood.
4. Extra strength Allen Wooden Beam Heads of 3-ply hardwood construction, with molded - on tires.
5. Rods holding entire assembly together.
6. Large Reinforcing Plates.
7. All lumber kiln dried.
8. Universally used for tire cord.
9. Beam Barrel lengths and Beam Head diameters to suit all warpers.

GN & MN

HIGH SPEED WARPER BEAM FOR ACETATE, NYLON AND OTHER SYNTHETICS

1. Large diameter, rock maple staves, with two screws supporting each stave at each support.
2. Improved Cast Iron Supports at ends, with hub extending through Beam Heads, providing great strength and shock resistance against rough handling.
3. Three intermediate supports are also Improved Cast Iron Type.
4. Extra strength Allen Wooden Beam Heads of 3-ply hardwood construction, with molded-on tires.
5. Rods holding entire assembly together.
6. Large Reinforcing Plates.
7. Accurately balanced for speeds to 1,000 yds. per minute.
8. All lumber kiln dried.
9. Beam Barrel lengths and Beam Head diameters to suit all warpers.

ADJUSTABLE WOODEN LOOM BEAM HEADS

1. Heavy type as shown, of 3-ply hardwood, with molded-on tires.
2. Diameters from 18" to 32".
3. Hole size to fit your present Beam Barrels.
4. Extreme lightness combined with extreme strength.
5. Absolutely unbreakable.
6. Easily adjusted.
7. Made of kiln dried lumber.

WARPERS, CREELS, BEAMERS

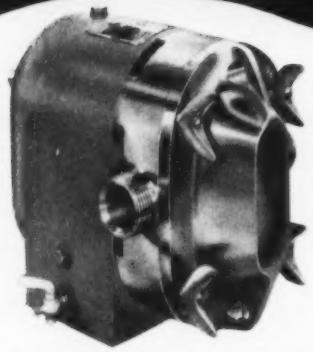
FOR

COTTON, RAYON AND WORSTED

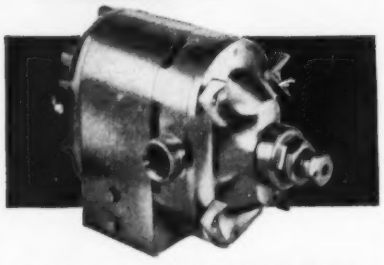
"GOOD WARPS ARE MADE ON GOOD BEAMS"

These Waukesha P.D.* Sanitary Pumps

Will Earn Money for YOU . . . In Savings and Product Protection

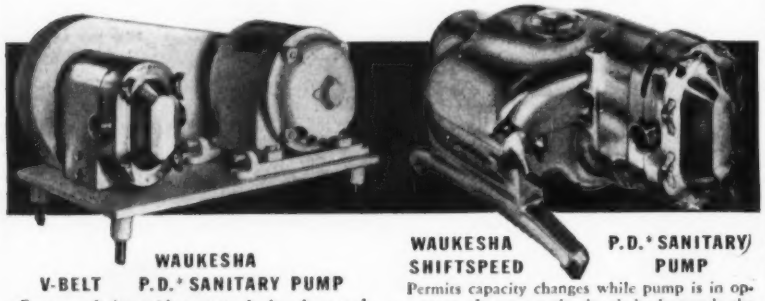


Waukesha P.D.* Sanitary Pumps are available in a wide range of sizes, in capacities from 20 pounds to 60,000 pounds per hour — against head pressures up to and including 100 pounds — for a wide variety of applications.



WAUKESHA VENTED COVER PUMP

Offers built-in protection against dangerous line back pressures. Stops product flow if pressure exceeds safe pre-set limits. Avoids by-passes, extra pipes, fittings, tubing. Available on all Waukesha Models.



WAUKESHA V-BELT P.D.* SANITARY PUMP

Compact design with new steel plate base and adjustable ball feet for floor clearance and utmost sanitation. Capacities from 1,000 to 60,000 pounds per hour.

WAUKESHA SHIFTSPEED P.D.* SANITARY PUMP

Permits capacity changes while pump is in operation. Just turn the handwheel, watch the dial on top of housing. High speed stop and external sealing device prevents over-shooting flow capacity. Streamlined, sanitary housing.

Whether your product is light liquid, creamy, semi-solid or even chunky, you can handle it more efficiently and more economically with a WAUKESHA P.D. Pump. For with Waukesha's Positive Displacement principle of action, your product comes *out* of the pump exactly as it goes *into* the pump. There's no possibility of churning, aeration, agitation, crushing. That's why it's standard in leading food, beverage, dairy, chemical and textile plants the country over.

The Waukesha P.D.* Pump features: One-Piece O-Ring Sanitary Seal — Compact streamlined construction of Corrosion-Resistant "Waukesha Metal" or Stainless Steel on all product-contact parts — Heavy Duty Ball Bearings — Faster cleaning and sanitation — and other advantages.

*P.D. — Positive Displacement for smooth flow.

WAUKESHA FOUNDRY COMPANY
1382 LINCOLN AVE.
WAUKESHA • WISCONSIN

Waukesha 100% SANITARY PUMPS
Dependable Product of a Responsible Manufacturer

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- **CLASSIFIED LIST SECTION**

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GUARD it CAREFULLY . . .

Next issue will not be out until November of next year!

When buying, or requesting product information, be sure to mention TEXTILE WORLD'S BUYERS' GUIDE

U S BOBBINS and SHUTTLES... *with a* 96-YEAR REPUTATION!

As America's Oldest and Largest Manufacturers

of almost every type and description of yarn carrier, U S is constantly aware of its continuing obligation to offer to the textile industry products representing only the very highest quality . . . and this obligation will always be fulfilled.

All U S Shuttles, Bobbins, Warper Beams and Heads, Spools, Wooden Tubes, Rolls and Cones are the result of a long process of research and development in U S laboratories.

Warper Beams and Heads as well as Adjustable Loom Beam Heads and the complete Warper Beam for Cotton, Spun Rayon and Wool are manufactured at the U S plant in Keene, New Hampshire.

U S is the United States Representative for Hy-du-lignum Picker Sticks (except for C & K looms).

U S BOBBIN & SHUTTLE CO.

Our brand new CATALOG is now AVAILABLE

Manufacturing Plants
LAWRENCE, MASS. • GREENVILLE, S. C. • KENNE, N. H.
General Sales Offices LAWRENCE, MASS.
Southern Division Headquarters GREENVILLE, S. C.
CHARLOTTE, N. C. • JOHNSON CITY, TENN • LAGRANGE, GA.
PHILADELPHIA, PA. • PROVIDENCE, R. I. • MINNEAPOLIS, MINN.
DALLAS: O. T. Daniel, Textile Supply Co.
LOS ANGELES: E. G. PAULES, 1762 W. Vernon Ave.
CANADA: W. J. Westaway, Montreal, Que., Hamilton, Ont.

PRODUCTION METAL PRODUCTS CO., INC.

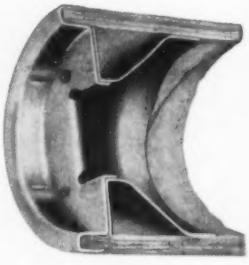
Core Specialists — Metal Stamping and Forming

1550 WEST CORTLAND STREET, CHICAGO 22, ILLINOIS

JOANNA METAL END PAPER SHIPPING CORES

for textiles of all types,—plastic sheeting, rubber coated cloth, etc.

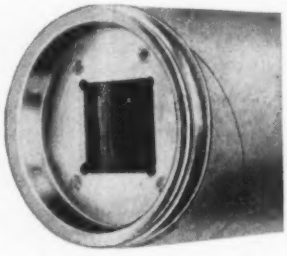
A RETURNABLE CORE—can be used over and over again. Light weight and sturdy strength reduce both freight charges and core charges.



MORE YARDAGE PER ROLL—Lighter weight and increased strength permit greater yardage per roll with consequent fewer number of rolls and less handling.

PROTECTS FABRIC IN TRANSIT—Keeps all textiles in factory-fresh condition. No spoilage or waste material. Eliminates annoyance and trouble of damage claims due to crushed cores.

STURDY—Double-Thick Spot Welded Reinforced Ends of 16-gauge and 20-gauge steel. Tubing of high kraft content for greater strength. Crush resistance up to 7500 lbs. Slippage failure between cylinder and hub tested to 784 inch—pounds.



PATENTED SELF LOCATING END with 1¼" or 1½" square hole speeds up winding operation in interplant handling and increases ease of handling by customer.

Standard Diameter—3½" O.D. with ¼" wall. Furnished in any desired length. Special waterproof or convolute wound cores available.

JOANNA MILL ROLL AND WINDING CORES

ALL STEEL AND ALL ALUMINUM

HEAVY GAUGE STEEL AND ALUMINUM—Tubing double-thick spot welded reinforced ends with 1¼" or 1½" square hole for fast, easy locating and winding. Diameters 3⅛", 4", 5", 6", and 8".

LOW PRICED—Exceptionally economical in first cost, service and endurance.

LONG LASTING—Remain in perfect condition over long periods of use. Ends will never wear.

CORE SPECIALISTS

We handle all types of cores and can give prompt service in any quantity of any composition required. In addition to being manufacturers of Joanna Metal End Paper, Steel, Cores, and Aluminum, we are distributors of nationally known and accepted Wood Cores. Center your core buying with the one specialist in position to handle all your requirements. Save time and correspondence. Secure service and satisfaction.

WRITE FOR SAMPLES AND PRICES

SAVE TIME...

in solving your daily Mill Problems with

Mill Reference Data Section

of this

BUYERS' GUIDE

and

REFERENCE DATA

Issue

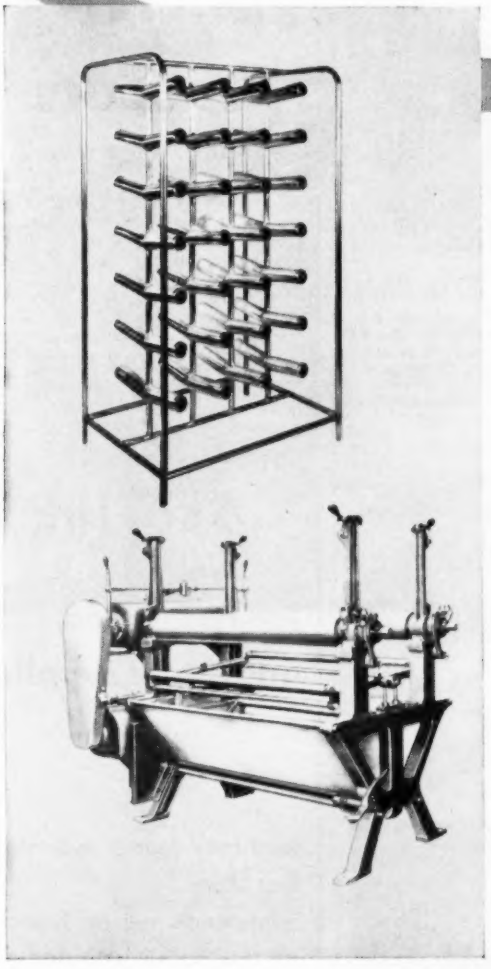
Its Exclusive Features Include:

- YARN NUMBER CONVERSION TABLE
- LOOM-PRODUCTION TABLE
- KNITTING PRODUCTION TABLE
- PRACTICAL MILL CALCULATIONS
- FORMULAS FOR ENGINEERS AND MASTER MECHANICS
- pH CURVES OF COMMON ACIDS, BASES AND SALTS

Get in the habit of using this reference. You'll find it invaluable in your work!

STEP UP..... quality—production and profits

STEP DOWN.. lost time—materials



More and more, manufacturers of machines for the textile industry are selecting Carpenter stainless tubing for parts.

That's because they have found that Carpenter stainless gives textile men extra advantages. It is light, permits top-speed machine operation. It is strong, stands up to years of service and mishandling. It is super-smooth, won't snag even fine nylon monofilaments. It is corrosion resistant, rust-proof, can't stain or spoil fabrics. It is pit-free, easy to clean and keep clean.

More, Carpenter always delivers exactly to specifications of dimension, tolerance, analysis, temper. And Carpenter customers know that ease of working and fabrication is assured in every length of every order.

When next you need stainless tubing, call Carpenter. We'll give you prompt action delivery, and be glad to give you any engineering or design assistance you may want.

The Carpenter Steel Company, Alloy Tube Division, Union, N.J.

Branch Offices: Atlanta Chicago Pittsburgh Houston Newark San Francisco

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

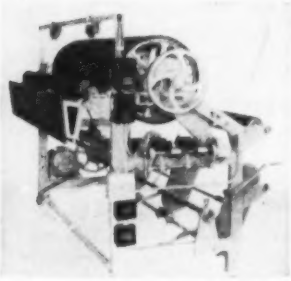
Carpenter

STAINLESS TUBING & PIPE

- guaranteed on every shipment

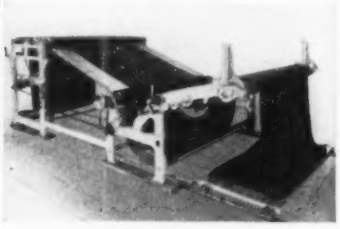
MAWACO

FINISHING MACHINES



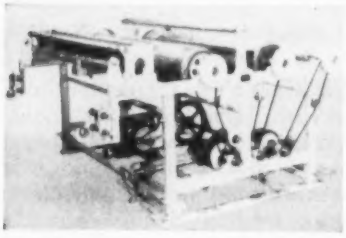
ELECTRONIC CLOTH MEASURING MACHINE

Measures woolen and worsted fabrics, doubled from bolt or open width from roll. Equally useful to mill, sponger, or clothing house. No measuring wheels, feelers, trip levers, to ride or touch fabric. Electric-eye clocks counter. Measurements extremely accurate, to within ¼ yard. Trip lever resets counter back to zero.



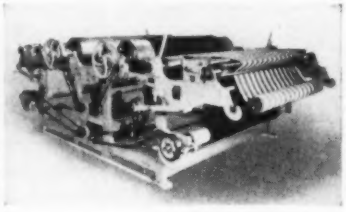
FULLSHRINK FINISHING MACHINE

Only machine for proper and scientific SHRINKING, FINISHING and CONDITIONING of face—finish fabrics. Leaves cloth fully shrunk, properly conditioned with deep rich luster, full hand. Fabric steamed, dried, cooled, rolled up or folded in one continuous operation. Face of fabric does not come in contact with rollers, bars. Used in finishing rooms of most prominent Woolen Mills and Clothing Houses. Standard equipment in almost every large Sponging Plant.



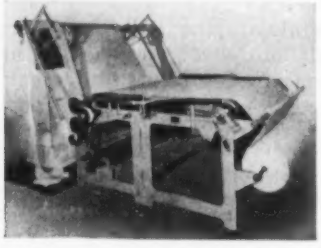
DOUBLE CYLINDER SPONGING MACHINE

For double sponging. Fabric first wound up and steamed on one cylinder then rewound onto other cylinder for steaming in opposite direction. We also manufacture 2-cylinder single sponging machine for single sponging on 2 cylinders simultaneously. Our single cylinder sponging machine is of similar construction as the double cylinder but 1 cylinder only.



DOUBLE CYLINDER DECATING MACHINE

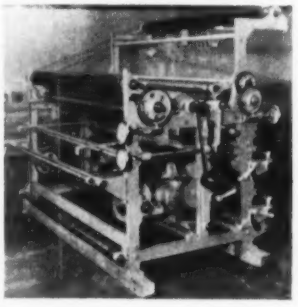
No time wasted waiting for steaming and cooling of fabric. While cloth on one cylinder is being steamed and cooled, operator winds up new cloth on other cylinder. Single control lever on each side permits automatic setting and releasing brake pressure. Among other features: heated apron rollers, special device for controlling tension of fabric, automatic elimination of water from inside of decating cylinder and adjustable leader roller.



THREAD PULLING MACHINE FOR FRIEZE

For removing "False Pick" web on friezes and other loop fabrics of similar weave

Driven by a 3 H. P. vari-speed motor mounted underneath. Fabric runs from 12 to 24 yds. per minute according to tightness and structure of frieze weave. As cloth runs through, selvage of false pick, together with false pick, is pulled out. Cloth delivered in book folds. False pick web falls into waste can.



RUBBERIZING MACHINE

For application of rubber compound or size to back of fabrics

Our method of applying rubber to fabric from underneath has many advantages over old method of spreading compound from trough above fabric:

1) Amount of rubber can be regulated accurately.
2) No danger of compound seeping through fabric and causing damage to finish.
3) Machine can be stopped any time without danger of rubber overflowing.

Write for information on COMPLETE LINE of finishing machines.

MAWACO MACHINE COMPANY, INC.

56 BOGART ST., BROOKLYN 6, N. Y.

This is your

BUYERS' GUIDE

If you need a

PRODUCT

or a

SERVICE

turn to the

CLASSIFIED LIST SECTION

for name and address of supplier.

●

Bold-face listings indicate that more information will be found on the pages indicated.

●

When buying, or requesting product information, be sure to mention TEXTILE WORLD'S BUYERS' GUIDE

HFL

IMPROVED LOOM PARTS

ESTABLISHED 1887

H. F. LIVERMORE CORPORATION

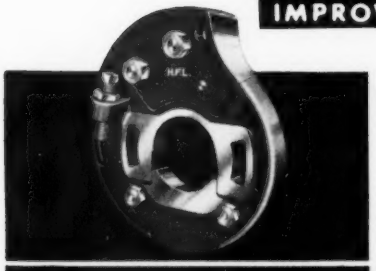
EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHWESTERN DIVISION
DALLAS, TEXAS

SOUTHERN DIVISION
GREENVILLE, S. C.

3 BIG "Service Stations" eager to serve you!

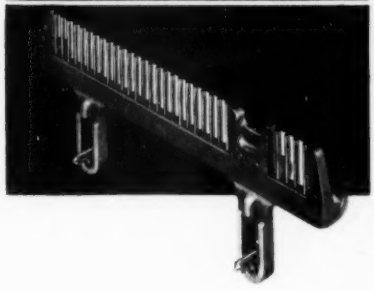
HFL IMPROVED LOOM PARTS are stocked in each warehouse . . .
Send your orders and inquiries to the nearest address



HFL IMPROVED

PICKING CAM PLATE, YOKE AND TOE Combinations

Can be attached directly over hub. HFL Improved Toe is of malleable iron, properly hardened to give longer service. Designed to apply to either one or two bolt plates.



HFL IMPROVED

ROLLING EVENER COMB

Teeth are unbreakable, made of spring steel which is centerless ground to a fine, smooth finish to reduce friction. All teeth are round and exactly alike. They are accurately and evenly spaced in the strong, cast aluminum frame.

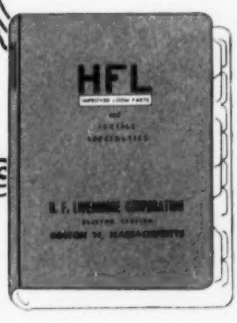
BOSTON
Executive Offices and Plant

GREENVILLE
Southern Division

DALLAS
Southwestern Division

COMPLETE CATALOG FREE on request

More than 2,000 mills are using HFL Improved Loom Parts. If your mill is not among them, you are cordially invited to send for the HFL catalog, which covers your particular type of loom. Specify the make and model of loom, also the material that you weave, such as cotton, woolen and worsteds, silk and rayon.



with **HFL** **LOOM PARTS** *of IMPROVED DESIGN*
plus IMPROVED MATERIALS, you minimize your downtime.
Result: IMPROVED QUALITY of your weave room output!

 For more information, write direct or use Reader Service post card.

Announcing . . .

SOMETHING *NEW* IN SHUTTLES

- **Reduces Wear!**
- **Reduces Maintenance Costs!**

PATENT APPLIED FOR

1. Positive first pick.
2. No need to change for Right or Left Wind.
3. Most Flexible Tension ever devised with Positive Lock.
4. Will take from finest Nylon Filling to Knobby Upholstery with only the turning of a screw for setting.
5. Beyond compare for Rubber Yarn.
6. New Patent Feature for Anchoring Eye, so that it will never loosen and cause broken picks.

You have tried the rest,
Now try the Best.

THE PAVIA SHUTTLE CO.

1901-25 LEHIGH ST. ALLENTOWN, PA.

Southern Rep. R. E. L. Holt Jr. Assoc. Inc.
124 Jefferson Bldg., Greensboro, N. C.

Whether it's

ABSORBENT-COTTON PROCESSING MACHINES

or

ZINC COMPOUNDS

if it's used in

a Textile Mill

you'll find it

listed in the

CLASSIFIED LIST SECTION

of this

BUYERS' GUIDE

along with

names and addresses

of suppliers

When buying, or requesting product information, be sure to mention TEXTILE WORLD'S BUYERS' GUIDE

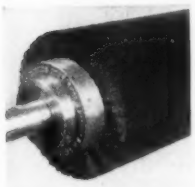
M. W. JENKINS' SONS, INC.

445 Pompton Ave., Telephone VERONA 8-5327

CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

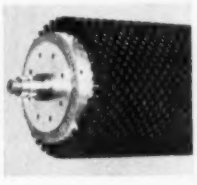
METLKOR*

CYLINDER BRUSHES



METLKOR Laying Brush for Worsted Brushing.

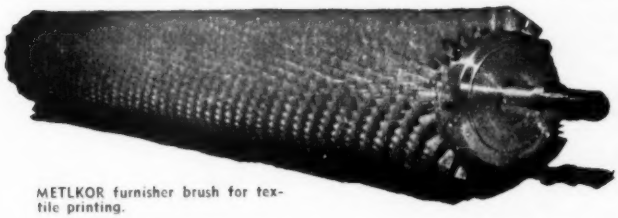
METLKOR Singer Brush.



METLKOR Brushing Machine Brush for Cottons.

METLKOR Capet Face Brush

METLKOR Flock Brush.



METLKOR furnisher brush for textile printing.

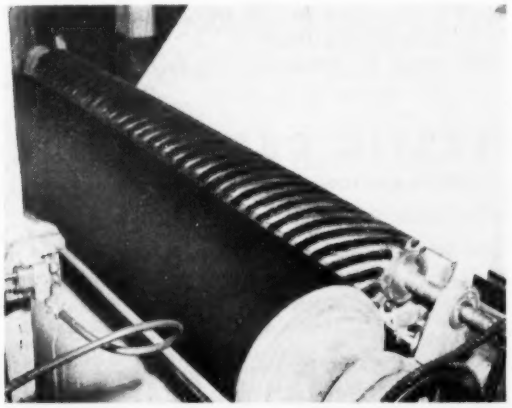
METLKOR* Brushes are made from the finest materials, by a patented process that assures efficient performance in all textile uses, and much longer brush life, and, therefore are *the most economical brushes you can use.*

Dynamically balanced where required.

Features include:

CORES—of cold drawn steel, aluminum, bronze, stainless steel—cannot sag, split, or get out of alignment. These cores are practically indestructible.

BRISTLE—of nylon, china, fiber and mixtures—in tufts—is wound on the metal cores with specially formed strips of non-corrosive metal and sealed firmly with baked plastic cement, which is moisture, acid, and alkali resistant.



A James Hunter carbonizer squeeze roll with a Jenkins' METLKOR Nylon Brush.

METLKOR FURNISHER BRUSHES DO NOT BLEED because there are no crevices around the base of bristle where color can lodge to run into other colors later on. Nor does the core retain any color. METLKOR furnishers are easy to clean and keep clean. Recommended for use with pigment colors.

BRISTLE IS RENEWABLE. When worn down, old bristle can be removed and replaced with new.

TEXTILE USES OF JENKINS' BRUSHES INCLUDE:

—***By TEXTILE PRINTERS***—for brushing prior to printing, color furnishing, blanket washing and drying, soaping in screen printing, rubber rolls, etc.

—***By COTTON AND RAYON MILLS***—for carding, shearing, brushing, reed cleaning, slasher roll cleaning, etc.

—***BY WOOLEN AND WORSTED MILLS***—for flock, raising and laying, carding, combing, singeing, pressing, teasel cleaning, teaseling, wet brushing, polishing steam brushing, carbonizer roll cleaning, etc.

—***BY CARPET MILLS***—for carding, brushing prior to printing, color furnishing, combing, sizing, shearing, brushing, etc.

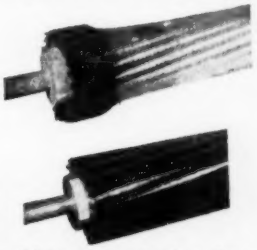
Also for many special uses—LIFEWOOD* BRUSHES for shade cloth coating, thread dressing, pin tentering, loom dusting, floor cleaning, paint brushes, etc.

MADE TO SPECIFICATION • COSTS NO MORE

PROMPT DELIVERY • EASY TO ORDER

** Trademark Reg. U. S. Pat. Off. Applied For*

The same METLKOR Darex Dryer Brush BEFORE bristle was removed and AFTER rewinding with new bristle



Bristle can be renewed as often as it wears down. The cores are practically indestructible.

Send for full facts about better Jenkins' Brushes for your textile processing purposes.

Call MILTON for dependable BEAMS

Light Metal featuring continuous welded construction

NYLON & RUBBER YARN BEAMS

FORGED HEADS
RIGID BARRELS

Forged heat-treated aluminum alloy heads and extra heavy wall barrels designed to withstand extreme pressures of monofilament; fine denier; low-turn nylon; and rubber yarns. 13¾" and 21" diameter heads.

SECTION BEAMS

Adaptable to all makes of warpers. Cast aluminum alloy heads and extruded aluminum barrels cannot shrink, swell, splinter or distort.

STEEL BARREL
WARP BEAMS
for BROAD, NARROW FABRIC, RIBBON, VELVET AND CARPET LOOMS

BROADLOOM BEAMS

for C & K and Draper Looms

Shown above is Milton's stud construction (also made with cast iron hubs).

RIBBON LOOM BEAMS

Adjustable head with fixed shaft, or fixed head with removable shaft.

WRITE FOR FREE BULLETINS

MILTON MACHINE WORKS
INCORPORATED
DESIGNERS • ENGINEERS • MANUFACTURERS
MILTON • PENNA.

Sobrook Fusing Machine

•

IMPROVED PRODUCT . . .

•

LOWER COSTS . . .

•

Unsurpassed for cutting and fusing the new textile fabrics (nylon, dacron, acetate, etc.) in narrow widths or trimming selvage on wide cloth. We have the "know how" to improve your product and lower your costs. *Here's how:*

SoBrook Machines cut and fuse up to 66" wide cloth at speeds up to 50 wide yds. per minute, machine furnished complete with 10 cutting units. Number of extra units according to widths cut. Cotton and plastics cut with special attachment. *Unmatched performance:*

Why not find out how SoBrook machines can save you money today and for years to come. A demonstration can be arranged at your convenience. Write, phone or wire.

SOBROOK MACHINE CO.

542 Third Ave. Phone: Hy. 9-5922 Brooklyn (15) New York

We Manufacture

THE RIGHT

ELASTIC

WEBBING and BRAID

for every requirement of the Underwear and Garment Industries

UNITED ELASTIC CORPORATION

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Philadelphia: F. L. Dorr, Marlyn Motel
Portland, Ore.: J. S. James, 549 Sherlock Bldg.
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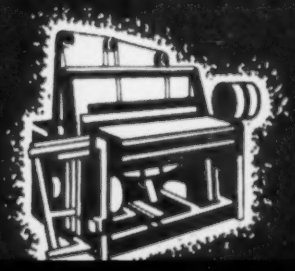
St. Paul: Norman Nelson, 294 Endicott Bldg.

USE OUR 40 YEARS OF BEARING EXPERIENCE!

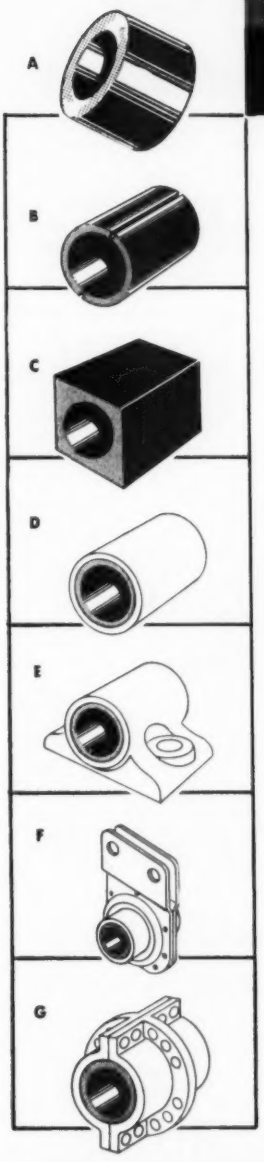
GRAPHALLOY BUSHINGS

...self-lubricating

GRAPHALLOY CONTAIN NO OIL



The IDEAL textile machinery bearings!



OPERATE DRY or SUBMERGED

GRAPHALLOY BUSHINGS cut textile manufacturing costs in these ways:

- ELIMINATE OIL and OILING SCHEDULES
- PREVENT OIL AND GREASE SPOTS ON FABRICS
- AVOID WEAR ON SHAFT AND BUSHING FROM LINT AND DUST GATHERED BY OIL FILM
- OPERATE WITHOUT ATTENTION IN "INACCESSIBLE" LOCATIONS
- REDUCE FIRE HAZARD
- HAVE LONG LIFE
- EXCEL WHEN SUBMERGED...AS IN WASHING, BLEACHING, DYEING, CARBONIZING
- WITHSTAND HIGH TEMPERATURE (to 700°F) AS IN DRYERS, OVENS, MANGLES, and in ROTARY STEAM JOINTS

The GRAPHALLOY process was patented 40 years ago and the name GRAPHALLOY has been our copyrighted trademark since that time. While this company has been selling GRAPHALLOY for the past 40 years, recent developments have added materially to its properties.

Use GRAPHALLOY BUSHINGS For TROUBLE-FREE OPERATION in the following TEXTILE EQUIPMENT:

BLEACHING	NEUTRALIZING
CARBONIZING	PICKING
CONDITIONING	PRESSING
CRABBING	SCOURING
DECATING	SINGEING
DRYING	SLASHING
DYEING	SOAPING
EXPANDING	SPINNING
FINISHING	STEEPING
FULLING	WASHING
GYRATING	WEAVING
MERCERIZING	WINDING

Send for descriptive literature and Bushing Inquiry Form 107A. Our broad experience is available to solve your problems.

GRAPHITE METALLIZING CORPORATION 1090 NEPPERHAN AVE. YONKERS, N. Y.

AT YOUR SERVICE

SPECIALIZED ENGINEERING

SPECIALIZED EXPERIENCE

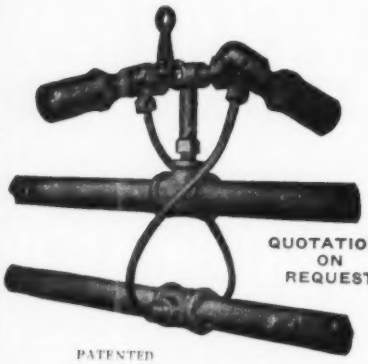
SPECIALIZED MACHINERY FOR TWISTING BUNCHING STRANDING FORMING AND LAYING IN THE TEXTILE • WIRE CORDAGE AND MANY OTHER INDUSTRIES

WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES MACHINE CO., INC.

2231 E. ONTARIO ST.
PHILADELPHIA 34
PA.

Humidifying Installations . . .



QUOTATIONS ON REQUEST

PATENTED

- Automatic Self-Cleaning Atomizers
- Air Compressors
- Automatic Humidity Controls
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Outstanding Features of AUTOMATIC ATOMIZER . . .

1. Simple in construction.
2. Non-adjustable.
3. All parts non-corrosive.
4. Jets and cleaning wires interchangeable.
5. Will maintain full capacity.
6. Full capacity conserves horsepower.
7. Less personal attention required.
8. Operates each time the control functions.
9. Can be connected to any system with 30 lbs. air pressure, gravity water supply.
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MARKER

Mark your fabrics with this
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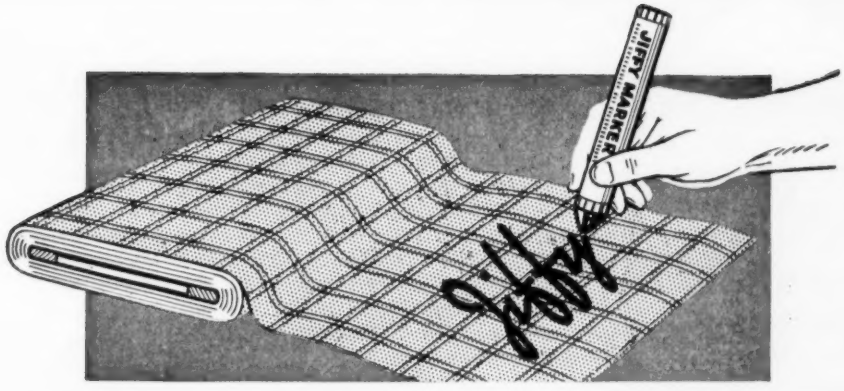

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THE NEW JIFFY MARKER With PERMANENT INK enables you to identify and safeguard your yardage in shorter time, at lower cost.

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MOISTURE TESTER
USING WEIGHING METHOD

√ AS ACCURATE AS OVEN GRAVIMETRIC METHODS
√ USE IN PLANT OR LABORATORY
√ SIMPLE • DURABLE
√ NO CALIBRATIONS REQUIRED
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HARRY W. DIETERT COMPANY
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Synthetic
SAPPHIRE
for
THREAD GUIDES - ACID STRIPPERS
inert to most chemicals

- Extremely Hard (Moh-9)
- High Wear Resistant
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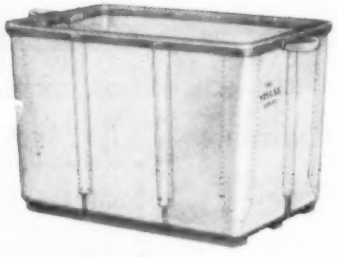

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"GRIP OF STEELE"
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INDUSTRIAL BRUSH CO., Inc.

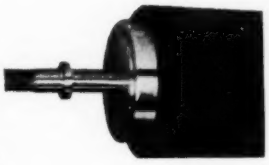
WOODSIDE AVENUE, LITTLE FALLS, NEW JERSEY

Manufacturers of
Textile Machine Brushes

Our Specialty
Metal Core Cylinder Brushes

COLOR FURNISHERS

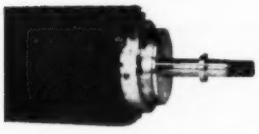
"FINESET"



An extremely light, metal core brush with fine, even bristle, set in water - alkali - and acid-resisting plastic. No metal used in binding the bristle onto the metal core.

Many users report that it carries more color and cleans the engraved roll better than do tufted brushes.

TUFTED



Metal core, metal wound—for those who prefer this construction. Incorporates specific improvements not found in other brushes of this type.

RAISING & LAYING BRUSHES

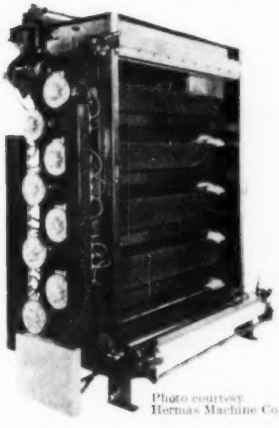


Photo courtesy Hermas Machine Co.

Densely wound. Their solid surface prevents streaking of material so common with the tufted type brush.

Fineset flock brushes have somewhat less density of bristle, to facilitate cleaning and removal of flock.

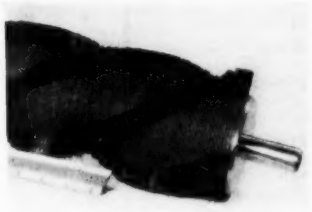
BLANKET WASHER

Diagonal arrangement of the bristle. This diagonal arrangement parallels the diagonal grain of nylon-faced blankets, presenting a continuous wall of bristle

to carry the water to the blanket. Cleans so thoroughly that a white handkerchief stays white when wiped over the surface of a cleaned blanket.

Both "Fineset" and Tufted may be dynamically balanced.

CARD BRUSH



You would expect to pay much more for a metal core, nylon bristle card brush than for the usual wood core brush with all its faults.

Yet by our "Fineset" method of setting bristle firmly in plastic binding in a metal core, the IN-DUS-CO CARD BRUSHES match the first cost of wood core brushes. The IN-DUS-CO metal core CARD BRUSH has many other features that commend it to mill men.

Bristle is closely set with an open space between the spiral rows for easy cleaning.

Lint and dirt find no lodgement at base of the bristle or in the wide, screwless space between rows.

These metal core card brushes with all their advantages cost the same as wood core brushes.

BLANKET SHEARING BRUSH

This 18 foot shearing machine brush is used by a carpet manufacturer for broadloom carpets and big rugs.

Gigging Lags for wet or dry use. Metal back cannot break and warp as do wooden slats.

For more information, write direct or use Reader Service post card.

Cut costs—
stop errors!

Model
43-44

Use
American

SPEED SET
GEAR
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NUMBERING MACHINES

FOR MARKING TEXTILE MILL
TAGS, TICKETS, LABELS, ETC.

Modern textile merchandising demands CLEAR, EASILY READ piece, lot and case numbers, size and yardage lengths, etc. Supply this demand and use the American Speed Set Gear Construction Numbering Machines. Such numbering with Speed Set machines can be done quickly and easily. Numbers change instantly with touch of fingers and ANY COMBINATION OF NUMBERS can be quickly obtained. All steel wheels, deeply engraved figures, self inking.

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Style	1235-16
No.	12345
Yards	56⅞ 56⅝

MODEL 42

Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way.

• **WRITE** TODAY FOR FOLDER describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing plants.

AMERICAN
NUMBERING MACHINE CO.
Atlantic and Shepherd Aves.
BROOKLYN 8, NEW YORK

MICROMETRIC **products**

For Quality and Uniformity

Comb and Gill Box Aprons
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Exclusive Manufacturers of Leather Textile Specialties
"For Those Who Want the Best"

Finest selection of hides available . . . choice of tannages . . . Thickness gauged to meet the most exacting requirements . . . excessive stretch removed . . . flexible waterproof splices . . .

As specialists in Drafting Aprons for the Worsted System, our workmen are experienced in selection and matching of hide areas to give "balance" and long life.

A trial order will please you with our service.

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TEXTILE LEATHERS

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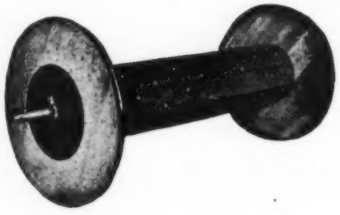

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Wooden Textile Specialties
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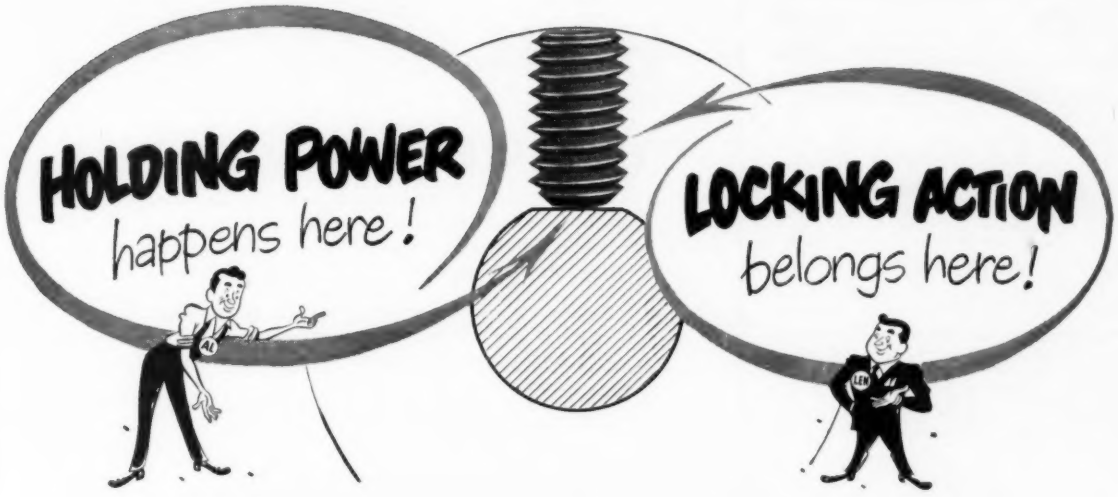
WHEN YOU SPECIFY SET SCREWS, REMEMBER . .

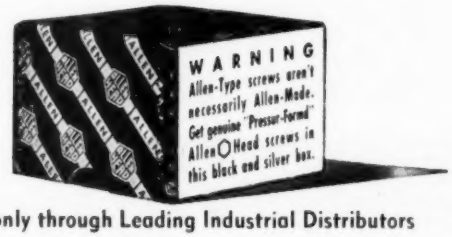


To do its job a set screw must *hold firmly* against both rotation and sideway motion, and it depends entirely on the *point* for this holding action.

Allen ○ screws hold better because they have the strength to permit firmer tightening, and because the points are designed *only* to produce maximum holding power.

Allen design does not compromise the holding power of the point in an attempt to make it perform a locking function too. Allen ○ screws require no locking action at the point, because of their high uniform accuracy of fit, pitch diameter and perfect thread lead. This provides maximum thread contact with ample friction to lock the screw in position during use and *re-use* under extreme vibrating stress.

THE **BUY** WORD IN SOCKET SCREWS IS **ALLEN**


WARNING
Allen-Type screws aren't necessarily Allen-Made.
Get genuine "Pressur-Formed" Allen ○ Head screws in this black and silver box.

Sold only through Leading Industrial Distributors

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No Levers
or
Linkages
in the

MECHO

AIR GUIDER

NO DOUBLE EDGES
NO SPATTERING

The MECHO Air Guider is simplicity itself. There are no weights, levers or linkages to bother with. Seams present no difficulty whatsoever. The MECHO has been so carefully and simply designed that all parts are changeable. You need never experience difficulty again with double edges, spattering or costly shut-downs for repairs.

The initial cost of the MECHO is extremely low. Maintenance is practically nil. The MECHO can be adjusted to handle from the lightest weight fabrics to Number 8 duck — and even while in operation.

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NEW HAVEN CONN.

SOUTHERN REPRESENTATIVE
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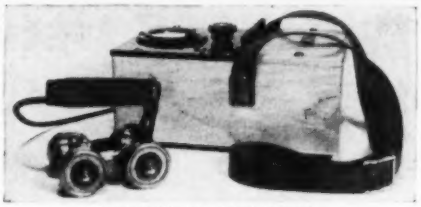
MORE AND MORE



TIME TESTED EQUIPMENT

DYERS - BLEACHERS - PRINTERS -

are using this rugged, accurate, simple to employ instrument for moisture checks on the running material. Moisture readable to .25% or less, and applied anywhere across the width of the fabric — for cotton, rayon and mixtures — wide percentage range.

Continuous indication from different spots across the width of the running web—using meter on AC power line permanently attached to the machine.

Machine tenders like to be able to follow the trend, to know what is happening to pick up wet streaks as easily as reading time, on a clock.

Priced within the reach of even the smaller plants. Picture shown only portable model.

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Grand Central Terminal, New York City 17, N. Y.

Licensed under patents of Raymond S. Hart

Fully Automatic "H-W" CONDITIONER®

For uniform conditioning of Woolens and Worsteds, Silks, Synthetics, Cottons, Hosiery (Pre-setting)

Arranged for either steam or electric operation. Temperature, humidity, time of operation automatically controlled. Where necessary "H-W" Conditioners are arranged to (1) preheat (2) condition (3) exhaust or dry by merely setting controls at beginning of operation. Yarn may be handled on bobbins, tubes, cones, cheeses, or skeins.

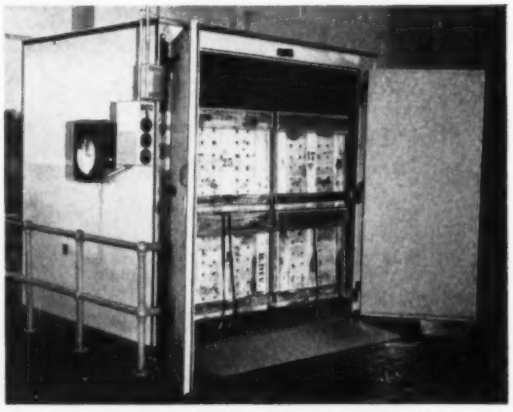
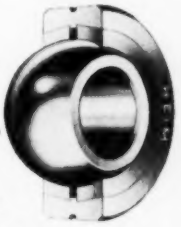


Photo shows Conditioner handling mohair and worsted. Machine arranged to preheat, condition, and exhaust automatically.

The Industrial Dryer Corporation
STAMFORD, CONN.

This is the HEIM Unibal Spherical Bearing.

It has a single, hardened ball which oscillates freely in all directions in its bronze socket.

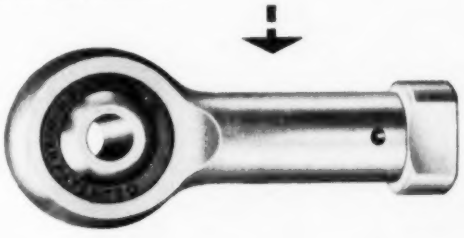


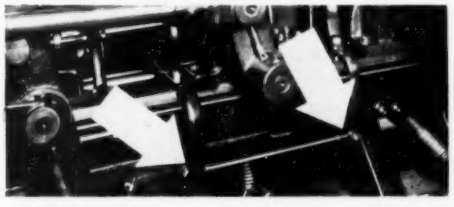
Cut away to show its construction, it looks like this . . .

When this is built into a rugged sweepstick of rubber-bonded fabric, it stops that "jerky" pick action which is caused by an elongated stud hole. Replace your worn out sweepsticks with this HEIM Unibal Sweepstick.

This same Unibal Spherical Bearing **when made in a male or female rod end corrects misalignment in all directions.**

Heim Rod Ends are a part of linkage mechanisms on many of America's textile machines.





One application, for example, is that of controlling the automatic engagement and disengagement of the Covering Knife Motion on The Reading Full-Fashioned Knitting Machine, made by Textile Machine Works, Reading, Pa. The Heim Rod Ends form an important connecting link between a control unit on the front of the machine and an automatic operation device at the rear.

THE HEIM COMPANY

FAIRFIELD, CONNECTICUT

Bearings, Rod Ends, Sweepsticks for the Textile Industry.

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SPECIALIZED ENGINEERING

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SPECIALIZED MACHINERY FOR TWISTING BUNCHING STRANDING FORMING AND LAYING IN THE TEXTILE • WIRE CORDAGE AND MANY OTHER INDUSTRIES

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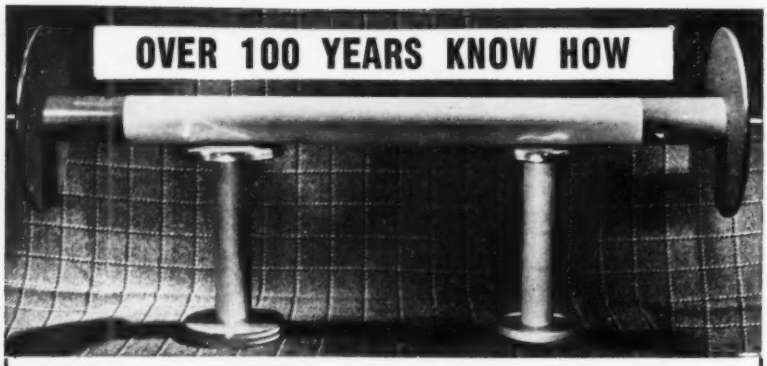

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Over 100 years manufacturing spools and bobbins. Jack, dresser, mule, card and condenser spools with fibre, or wooden heads. Also aluminum barrels.

FOR COTTON Warper and Twister Spools

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WARP BEAMS for Narrow Fabric

PLASTIC YARN SHIPPING SPOOLS

Spools Equipped with Anderson Rim or Boynton Shields Up to 6" Head Diameter if Desired. Also with Dixon Drivers or Brass Bushings.

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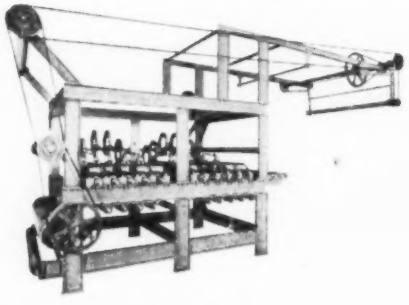

- Velveteen Cutting Machine
- Treadle Brushing Machine (CAM ACTION & CIRCULAR)
- Cross Brushing Machine

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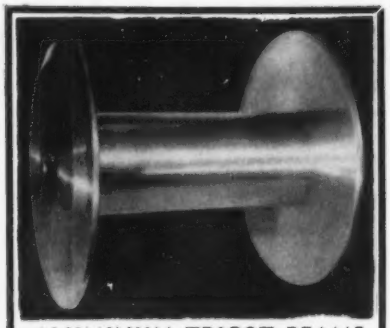

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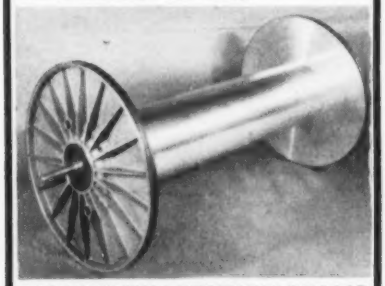
Designed for fine denier Nylon Yarns. Heads replaceable if accidentally damaged. Thousands giving satisfactory service.

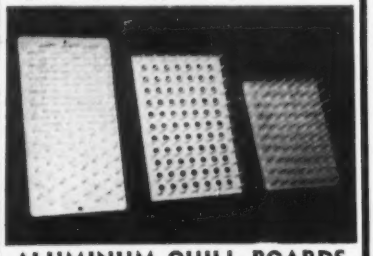
ALUMINUM SECTION BEAMS for NYLON

Eliminate trouble with crushed barrels, separation and broken heads. We can help you secure maximum beam loading.



ALUMINUM SECTION BEAMS for RAYON

A light weight unit designed specifically for Rayon Textile and Tire Cord Yarns. Eighteen light ribs give exceptional rigidity.



ALUMINUM QUILL BOARDS

of outstanding quality.
For use with Automatic Quillers or to meet your individual requirements. Can be Anodized if desired to prevent smutting.

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BRIGGS-SHAFFNER COMPANY
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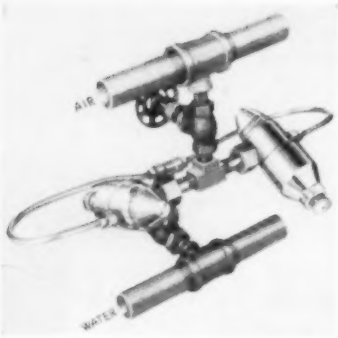
Established - 1897

RIHCO *For Controlled Humidity In Textile Mills*



RIHCO Humidifier System

The RIHCO Humidifier System is an atomizer system, long recognized as the finest and simplest form of conventional humidification. The RIHCO System can use smaller compressors, air receivers and aftercoolers than other systems because much less air is used to vaporize any required volume of water. The RIHCO Type BN Head provides exceptional efficiency due to the principle of mixing air and water, both under pressure inside the head (see illustration at left). Every particle of air is bearing water as it emerges from the nozzle . . . none of the air can escape without doing its share of the work in breaking up the water into the finest possible spray . . . there is no waste energy.

Also . . .

- **RIHCO System of Evaporative Cooling**
- **ELECTRONIC Humidity Control**

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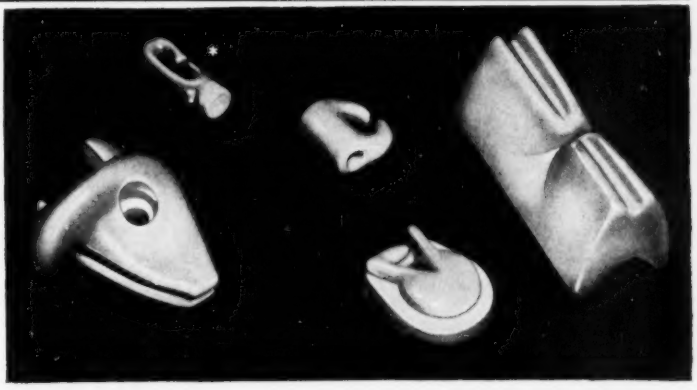
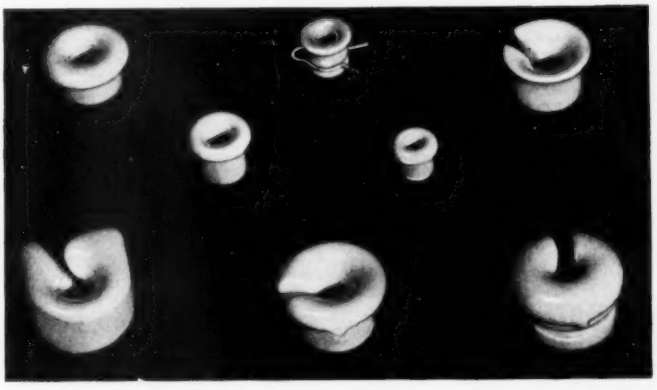
THREAD GUIDES

For Every Textile Service
...For More Than 70 Years





Above—"BLUE SATIN FINISH" PORCELAIN GUIDES.

An exclusive development of Mitchell-Bissell — guides with this finish are more resistant to thread wear than any glazed porcelain guides ever offered the industry. "Blue Satin Finish" Guides, instead of being shiny and glass-like, have a surface of thousands of small rounded grains closely packed together. Reduced wear and longer guide life result because, by breaking the continuity of contact between yarn and guide, friction is reduced. "U. S. Pat. No. 2,152,136.

Left—WHITE GLAZED PORCELAIN GUIDES.

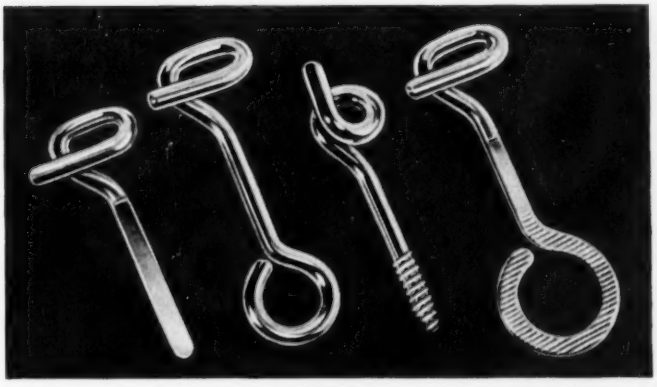
The Mitchell-Bissell Company originated the use of porcelain as a thread guide for the textile industry. The White Glazed Porcelain Guides shown here are representative of thousands of patterns that have been sold to all branches of the textile industry since this company was founded over seventy years ago. Improved in quality from time to time they are still "Standard."

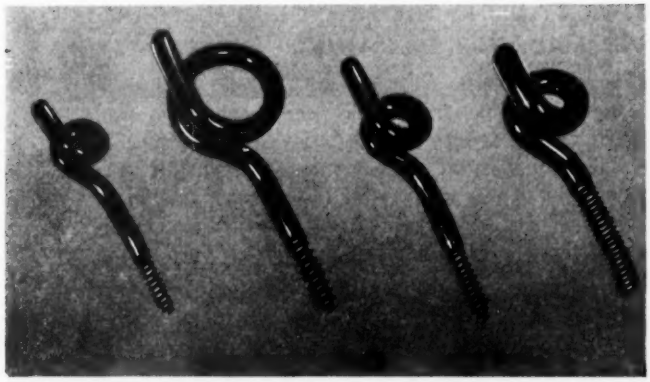
Right—CHROMIUM PLATED STEEL GUIDES.

The plating on Mitchell-Bissell Chromium Plated Steel Guides is harder and denser than on any other wire guides. Our methods of fabricating and polishing develop a surface smoothness far beyond usual commercial standards. Because of their superior resistance to thread wear these guides are used extensively on machinery for processing rayon and nylon yarns and also for many other severe applications. Mirror or satin finish.

Below—ENAMELED IRON GUIDES.

Where wire guides are desired, and service conditions do not require chromium-plated guides, our Enameled Iron Guides give exceptionally good service, with a low initial cost. Made with the care and craftsmanship that are standard practice on all Mitchell-Bissell products, these are recommended as centering and ballooning guides, and for cotton, woolen and other soft yarns.





MITCHELL-
BISSELL CO.

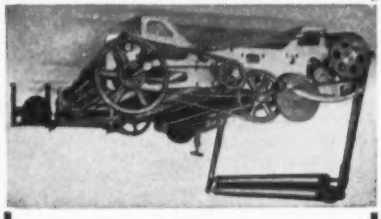
TRENTON, N. J.

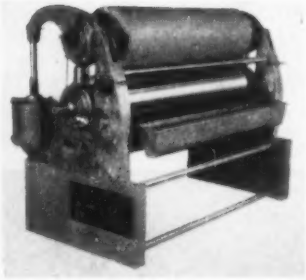
Southern Representative: **R. E. L. Holt, Jr. & Associates**
Greensboro, N. C.

TEXTILE FINISHING MACHINERY SINCE 1892

A M W

IMPROVED PROVEN PERFORMANCE





A.M.W. PRODUCTS

Continuous open width processing equipment: crabbing - washing - drying - soaping - scutching - padding - power perching - singing - coating - back filling - carbonizing - adjustable spiral openers - angular guiders - sewing machines - rolls of all kinds - design and engineering of special machinery.

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TEL. ARLINGTON 5-9600

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DOESN'T HAVE TO BE A PROBLEM

when you use the new ANALYTE COLOR COMPARATOR

For here is scientifically reproduced "natural daylight" which makes possible human-eye detection of the slightest color variations. Those "heart-stopping" errors which can cost you hundreds of man-hours and thousands of dollars are a thing of the past—when the ANALYTE COLOR COMPARATOR is on the job for you. It's the kind of insurance against color mis-matching which will always be your "ounce of prevention."

ANALYTE COLOR COMPARATOR is your SAFEST BET

- Easy to use and maintain, and long life.
- Permits highest color-matching definitions.
- Gives unequalled color-matching separation.
- Spectrum is completely continuous.
- Light output can be kept constant.

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ALL TEXTILE MILLS

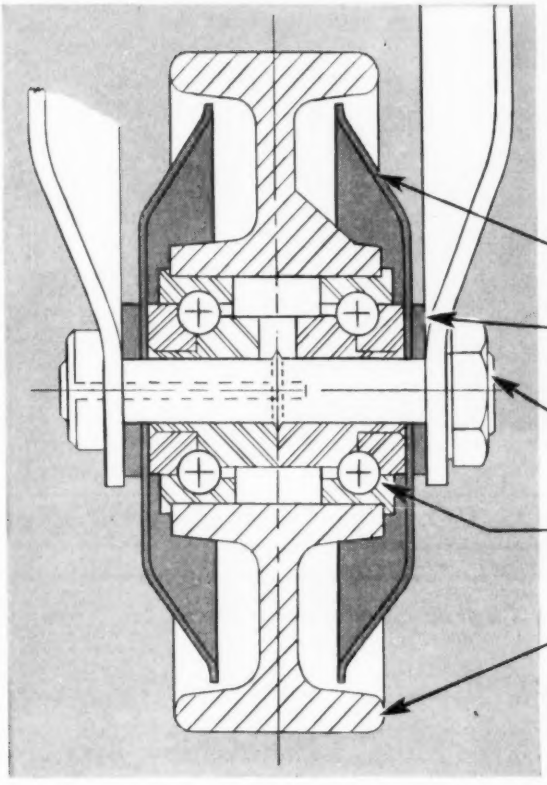
INTERESTED IN QUALITY AND ECONOMY ARE SAVING MONEY EVERY DAY

HOW? BY USING THE FINEST LUG SUPPORTS EVER MADE FOR 1½" AND 2" LUG STRAPS.

These lug supports are very light in weight, and give the highest possible strength and wear, because they are cast from the best known ALUMINUM ALLOY—copper-silicon and magnesium. Light, strong, and highly resistant to wear, they increase the life of picker stick and lug strap. Simple construction; no complicated parts. Costs little and does a fine job.

WEST SIDE FOUNDRY COMPANY
TEXTILE SPECIALISTS • CONE HOLDERS • LUG SUPPORTS
2 SOUTH HANKS STREET, ROME, GEORGIA

Bassick casters for textile mills reduce maintenance costs



IMPROVED THREAD GUARD PREVENTS CLOGGING

• Bassick engineers came home with the facts after a first-hand look at caster operating conditions in textile mills. The facts brought back are responsible for these new casters developed to give you better materials handling and lower maintenance costs. Check the construction features shown in the diagram and you'll see what we mean:

A. Carefully designed and formed steel thread guards are locked in position.

B. Spacer washer gives ample clearance between caster leg and thread guard—a vital point. In normal usage, threads *cannot* be wedged in here—they fall on through. If accumulation occurs, it is easily removed without disassembling.

C. Bolt-and-nut removable axle with pressure fitting in head for easy lubrication of wheel bearing.

D. Four-in. semi-steel wheel in all textile casters has top-quality ball-bearing action for easier rolling. (Other 4″ wheels and all 5″ and 6″ sizes have roller bearings.)

E. Smoothly rounded tread has no sharp edges to damage floors.

...plus Bassick's famous double-ball race construction

Extra-efficient ball-bearing action swivels easier, lasts longer in tough assignments. Fully case-hardened bearing raceways for extra durability, longer service life.

FOR SMOOTH-ROLLING DOFFING TRUCKS

This special rugged 4″ steel caster with easy-rolling, ball-bearing, smooth-tread, semi-steel wheel is made to give years of trouble-free performance. Low in first cost, and low in maintenance needs, it is the ideal caster for doffing trucks.

SPECIAL NO. 4381-2B-1A

THE BASSICK COMPANY

Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS ...MAKING CASTERS DO MORE

THERE'S A BASSICK CASTER FOR EVERY JOB!

Bassick textile casters are available with rigid or swivel action in 4″, 5″ and 6″ sizes. Wheels may be ordered in CANAPHIN (durable canvas impregnated phenolic composition that's easy on floors), ATLASITE (non-brittle rubber composition), BACO-NEOPRENE (soft rubber) and SEMI-STEEL. Get in touch with your Bassick industrial distributor for facts and figures on how Bassick textile casters can save you money while doing a better job for you.

3 LEADERS
FOR GREATER EFFICIENCY

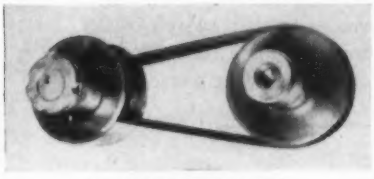
YOUR OWN TESTS
will prove their unsurpassed performance

•

SMM Roller-Bearing Spindles
for more uniform yarn with greater economy
(for all textile fibres—natural or synthetic)

•

ICOR Variable-Speed Pulleys
(Speed Ratio up 1:17—½—25 hp)
for better use and control of production capacity with unlimited flexibility in operation & application



LANDOLT Double-Twist Spindles

•

for double production
with only a fractional increase in cost and space

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We gladly serve you with particulars

GUBELIN INTERNATIONAL CORP.
35 W. 53rd St. New York 19, N. Y.

THE YARNS YOU BUY GO INTO THE CLOTH
. . . not into waste!

TOMPKINS D-2

DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE

many mills call it "the perfect cloth machine"!

SEE FOR YOURSELF . . . let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!

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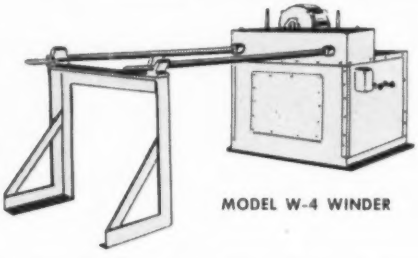
TOMPKINS BROS. CO. • Syracuse 4, N. Y.

Answer to Center Shaft Rewinding . . .



MODEL W-4 WINDER

GREYSTONE'S HYDRAULIC CONSTANT-TENSION WINDER

Small Core to Large Core Automatically — This double bar winder with clutch on each shaft, permits an automatic increase of torque at the winding shaft as the roll increases in diameter. An increase of oil pressure in a pump driven by a differential gear set accomplishes the torque increase. A brake pump on the output shaft makes it possible to wind tensionless from a small core to a large diameter automatically.

Dance Rolls Not Needed — Dance rolls are not used to control tension on this winder. Nothing touches the material between the process machine and the winder. Any thickness of material can be wound to any diameter without making any changes. Simply drive the winder with any source of power.

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CENTERDALE 11, R. I. **TEL. CENTERDALE 1-5330**

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NATIONAL VULCANIZED FIBRE CO.

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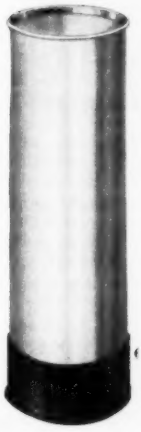
No. 62F

GENUINE HARD VULCANIZED FIBRE TRUCK

The original fibre truck, introduced over thirty years ago and still the best type of truck for many purposes, made to order in any size.



ROVING CANS

(Seamless)

Genuine Hard Vulcanized Fibre
Seamless Tube Construction
12"x36" 14"x36" 15"x36" 16"x36" 18"x36"
Metal Top—Single or Double-Turned Fibre Top

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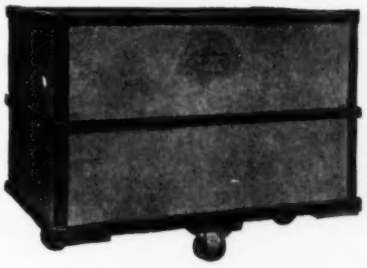


Style D

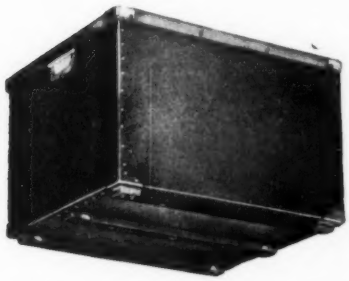
STEEL COVERED DREADNAUGHT TRUCK

Steel veneer inside and out, over moisture proof core. New cold rolled top moulding—continuous corrugated angle completely around bottom. Steel Corner angles.

Structural steel Skyscraper construction

HEAVY DUTY MILL BOX

Plain Fibre or Steel Klad Fibre



No. 2—MILL BOX—In this construction weight has been reduced to the minimum without sacrifice of strength.

Model C

A brand new construction made in any size to fit your exact requirements. Hard vulcanized fibre veneered to both sides of formed moisture-resistant core. Rounded corners—glass smooth inside and out. The result of fifty years of truck-building experience.

Write for complete information

A COMPLETE HANDLING SYSTEM

Genuine Hard Vulcanized Fibre boxes built to stack firmly without damage to contents of lower box.

FLEXIBLE—EFFICIENT—INEXPENSIVE

Angle iron Dolly Trucks made to take one or more tiers of boxes.
All Kennett Equipment is made to exact size and specifications to fit your working conditions.

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NO-WASTE

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SPECIALIZED ENGINEERING

SPECIALIZED EXPERIENCE

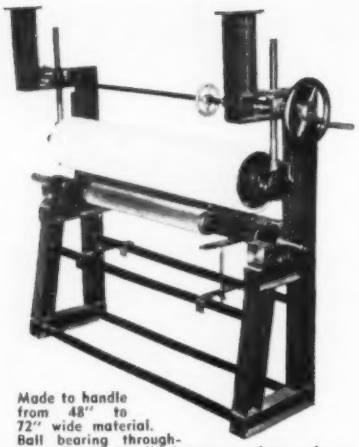
SPECIALIZED MACHINERY FOR TWISTING BUNCHING STRANDING FORMING AND LAYING IN THE TEXTILE • WIRE CORDAGE AND MANY OTHER INDUSTRIES

WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES MACHINE CO., INC.

2231 E. ONTARIO ST.
PHILADELPHIA 34
PA.

Single color Production Machine



Made to handle from 48" to 72" wide material. Ball bearing throughout. Engraved roll changeover time, only a matter of minutes. We also make Two Color Print Machines in widths from 24" to 84".

Field reports from users of the LIBERTY Single Color Production Print Machine for plastic films confirm our most enthusiastic expectations:

- "We like the idea of having a clear view of both the doctor blade and the cylinder at all times."
- "When printing from the doctor, we can start running with only a pint of ink; two or three quarts do the trick when using the ink pan."
- " . . . never seen a machine where coppers could be changed so quickly. Appreciate not having to remove the coppers to wash them up."

Now about price: Liberty does not believe a machine with equivalent features, doing comparable printing, is available anywhere at less than twice the price.

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274 FOURTH AVE. PATERSON 4, N. J.

ONCE USED, ALWAYS SPECIFIED!

EVER-DEPENDABLE
TATEM
SELECTED HICKORY
PICKER STICKS

Yes—Tatem picker sticks cost a little more but last much longer. That's because they are made of only finest quality hickory—perfectly cut, seasoned and finished. Low maintenance cost on looms carrying these picker sticks testifies to the knowledge and modern manufacturing skills developed by Tatem over 84 years.

For that strong, smooth stroke at the heart of your loom you'll stay sold on Tatem.

PICKER STICKS • PARALLEL PLUGS • SWEEPSTICKS • CONNECTORS and OTHER LOOM PARTS

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Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

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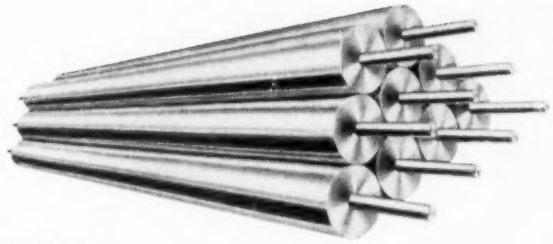
Chicago 3, Ill.	Detroit 26, Mich.	New York 16, N. Y.	San Francisco 3, Cal.	Tulsa 3, Okla.

B & W CARBON ALLOY STAINLESS TUBING



TYPES

Seamless Tubes—hot-finished, cold-drawn, or roto-rocked

Welded Tubes—from hot-rolled or cold-rolled strip

GRADES

Stainless Steels—Austenitic and Ferritic types, B&W Croloys 12 to 27

Intermediate Chrome Molybdenum Alloys—B&W Croloys ½ to 9

SAE—AISI Alloys and Nitralloy Steels

Nickel Steels—B&W Nicloys 3½, 5, and 9

Carbon Molybdenum Steels—in various grades

Carbon Steels—in various grades

SIZES

Up to 9⅝ inches outside diameter in a wide range of wall thicknesses

SURFACE FINISHES

As rolled, as drawn, as welded, flash removed, turned, scale-free, and polished.

SPECIFICATIONS

Made to any of the standard specifications such as those of the ASTM and U. S. Government and as determined by individual requirements.

QUALITY

Open-hearth and electric-furnace steels, including aircraft and magnaflux qualities.

CONDITION

Unannealed, annealed, tempered, normalized, or otherwise heat-treated as required.

SHAPES

Round, square, rectangular, or special shapes.

FABRICATION

Upsetting, swaging, expanding, bending, safe-ending, and machining.

Seamless or Welded

Pressure Tubing

Air Conditioning and Humidification Systems • Condensers • Drying Machines • Dye Tanks • Tubing • Heat Exchangers • Homogenizers • Hydraulic Lines • Skein and Package Dyeing Machines.

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Ager Rolls • Bushing Pulleys • Cylinders • Cloth Opener Spirals • Lease Rods and Separator Bars • Conveyor Rolls • Press Rolls • Cards and Condenser Rolls • Tension Rolls • Special Shaped Tubing for Roving Frame Flyers • Tube Structure for Magazine Creels • Wool Scouring Machine Rakes • Various Types of Whip Rolls, Take-Up Rolls, and Cloth Rolls • Nylon Yarn Working Rolls • Picking Machine Rolls.

All B&W Tubular products are produced to meet specific fabrication and service requirements, including:

Efficient Heat Transfer	**Low-Temperature Strength**
Ease of Installation	**High-Temperature Strength**
Ease of Fabrication	**Oxidation Resistance**
• **Machining**	**Structural Strength**
• **Forming**	**Light Weight**
• **Joining**	**Dimensional Accuracy**
Heat Resistance	**Abrasion Resistance**
Non-Contamination	**Corrosion Resistance**

Write for Bulletin TB-353.

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TECHNICAL ASSISTANCE

Engineers and metallurgists of the B&W technical staff are always prepared to help you determine the most suitable and economical B&W tubing for your particular use.

TA-1721

Serving The Textile Industry For Over Fifty Years

- TEXTILE PINS FOR PROCESSING ALL FIBERS
- FLAT PINS FOR WARNER SWASEY PIN DRAFTERS
- ROUND PINS FOR HOLDSWORTH and BERKER MACHINES
- ROUND AND FLAT PINS USED IN BOTH BRADFORD and FRENCH SYSTEMS

General Industries Inc., (CONN.) DEAN DIVISION

Putnam **Conn.**

REPAIR SERVICE

REED
TEXTILE SPECIALTIES
TRADE MARK

NEW STEEL CYLINDERS *Designed and Constructed*

All Types of

LAGS PINS SLATS

Used in the Processing of

WOOL, COTTON, RAYON, NYLON, JUTE, SISAL, FLAX, HEMP, MILL WASTE AND SHODDY

LAGS *Repinned,* **CYLINDERS** *Recovered,* **DOFFER PLATES** *Repinned,* **TENTER PLATES** *Repinned,* **GILLS** *Repinned*

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370 SEVENTH AVE. NEW YORK 1, N.Y.

FAULTLESS CASTER CORPORATION

Dept. TW-53, EVANSVILLE 7, IND. ***Canadian Factory:*** **Stratford, Ontario**

Branches in ATLANTA, BOSTON, CHICAGO, CLEVELAND, DALLAS, DETROIT, GRAND RAPIDS, HIGH POINT, HOUSTON, INDIANAPOLIS, LOS ANGELES, NEW YORK, PHILADELPHIA, ST. LOUIS

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NOELTING

Faultless

TEXTILE CASTERS

New drawn steel wheel with long-lasting double tread, round edges now available!

SNUG FITTING THREAD GUARD—*Saves Cleaning Costs*
STANDARDIZED BOLT HOLES—*Aid Installation and Servicing*
SHOCK AND RUSTPROOF FRAMES—*Give Longer Mileage*

For complete specifications see Faultless Catalog No. 156—call your distributor.

500 SERIES RIGID CASTER WITH PLASKITE WHEEL AND THREAD GUARD

Can be had with new Drawn Steel Wheel and Thread Guard

500 Series Casters are your assurance against interrupted production and lost motion. 4" and 5" sizes are recommended for Roving Box service. 3" and 4" sizes are for use on Doff Boxes.

ROVING AND DOFF BOX CASTERS

with improved Thread Guard and Standardized, interchangeable Bolt Holes.

The Textile Industry has found in the 500 Series Truck Caster a combination of constructional features, workmanship and range of sizes which makes it ideal for Roving and Doff Box use. Choice of wheels to suit floor surface.

500 SERIES

Wheel Style No.		Wheel Dia. x Face (In.)	Plate Size (In.)	Mounting Hole Spacing (In.)	Overall Height (In.)	Load Cap. Ea. (Lbs.)
Drawn Steel (Roller Brg.)	Plaskite (Roller Brg.)					
	531-3†	3x1 ¼	2½x4 1⅜	1¾x4	3 1⅜	275
504-4*	531-4	4x1 ½	3⅛x6¼	1¾x5	5 3/32	400
504-5*	531-5	5x1 ⅝	3½x7¼	1¾x6	6 9/16	500
504-6*	531-6	6x2	3¾x6⅛	2½x5	7 3/8	650

†With Plain Bearing—#530-3, same specifications as #531-3
*Ball Bearing Wheel
THREAD GUARDS available for 3", 4", and 5" casters. When ordering specify "TG",

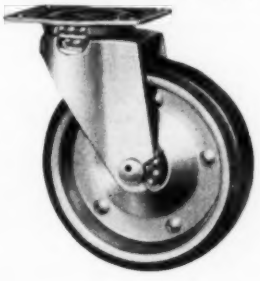
100 SERIES

Wheel Style No.		Wheel Dia. x Face (In.)	Plate Size (In.)	Mounting Hole Spacing (In.)	Overall Height (In.)	Load Cap. Ea. (Lbs.)
Drawn Steel (Roller Brg.)	Plaskite (Roller Brg.)					
	131-3†	3x1 ¼	3⅛x4⅛	2⅜x3⅜	3 1⅜	225
104-4*	131-4	4x1 ½	4 x5⅛	3 x4	5	325
104-5*	131-5	5x1 ⅝	5 1/16x5 13/16	3¾x4½	6 9/16	425
104-6*	131-6	6x2	5 13/16x6 7/16	3⅜x5¼	7 3/8	500

†With Plain Bearing—#130-3, same specifications as #131-3
*Ball Bearing Wheel
THREAD GUARDS available for 3", 4", and 5" casters. When ordering specify "TG",

100 SERIES SWIVEL CASTER WITH DRAWN STEEL WHEEL AND THREAD GUARD

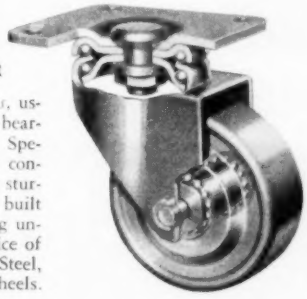
This is the swivel type companion caster to the 500 Series illustrated above. For general use this sturdy caster is unsurpassed. Frame and top plate are made of extra heavy gauge steel. All parts deeply corrugated for extra strength. Large dia. raceway with hardened ball bearings. Can be had with new Drawn Steel Wheel in cadmium finish, Semi-steel, Ruberex or Plaskite Wheels. Wheel sizes and overall heights match the corresponding Series 500 casters.



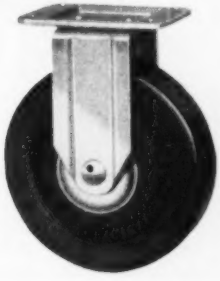
400 SERIES LIGHT DUTY SWIVEL CASTER

Double ball bearing construction allows horn to swivel freely between two full rows of hardened ball bearings in deep-formed uninterrupted raceways. Dust-proof. Rust-resistant cadmium finish.

1100 SERIES MEDIUM DUTY SWIVEL CASTER



Two complete ball races, using best grade balls, all bearing surfaces hardened. Special take-up king pin construction, dust-proof. A sturdier and more stoutly built caster for easy swiveling under heavier loads. Choice of Drawn Steel, Semi - Steel, Plaskite or Ruberex Wheels.



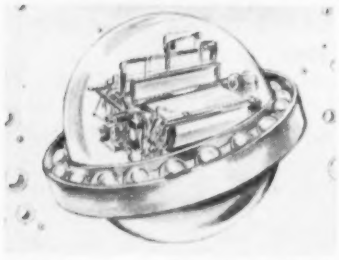
4700 SERIES LIGHT DUTY RIGID CASTER

Rigid partner to 400 Series. Side members of heavy gauge steel are constructed to withstand punishing lateral shocks. Rust-resistant cadmium finish.

For more information, write direct or use Reader Service post card.

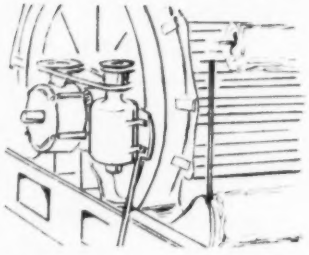
Add the P to help your IQ

ENGINEERED and TESTED



LOOM BALL BEARINGS

"Another First" by Precision (Pat. Applied For) making old looms better—at 96 vital bearing points, immeasurably improving Quality, Quantity, Economy.



CARD DRIVE

Individual, space saving. (Pat. Applied For). No mounting on Card Frame. Stripper Roll Drive is optional. Motor and controls NEMA approved.

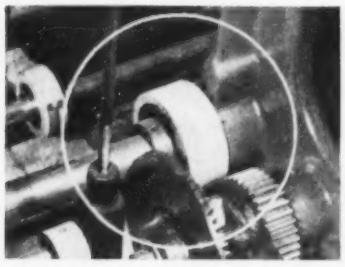
4 typical ways!

In this case, "P" is for PRECISION Gear and "IQ" is for your problem for Improving Quality-Quantity. PRECISION has solved many "IQ" problems involving power applications, for making and moving yarns —from the Picker through the Weave Room. A "special" problem of yours may have a "stock" answer—representing so many Chain Drives, Ball Bearings, Gears, Cams and related parts—on our shelves . . . each engineered and designed by PRECISION and accepted by the Textile Industry.

What's Your "IQ" Problem?

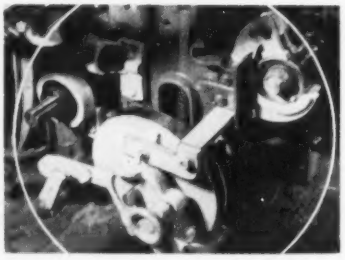
Shown herewith are only four typical examples of PRECISION'S leadership in Improving Quality and Quantity, cutting production and maintenance costs. New solutions are on our drawing boards. First, though, check with your PRECISION man, or call us. We may have "stock" items for your "special" problem.

CAMS • CHAIN DRIVES
GEARS • BEARINGS



ROVING FRAME BEARINGS

Better-than-new, smoother results. (Patented) 10 units—single or total installation. Save much more than they cost. Pictured is Lifter Shaft bearing.



Self Adjusting LOOM LET-OFF

Correct Yarn Tension, regardless of Beam size. (Pat. Applied For). Only EIGHT parts, mounted. No wear except Friction material.

PRECISION
GEAR AND MACHINE CO.
2001 North Tryon St., Charlotte, N. C.
PHONE 4-6857
ENGINEERS : MANUFACTURERS

ENGINEERED and TESTED

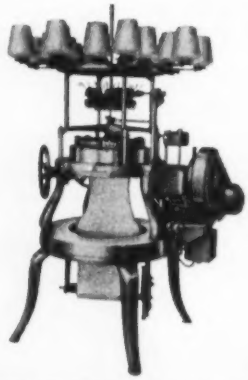
KNITTING MACHINERY
SUPPLIES & ACCESSORIES

Bowman

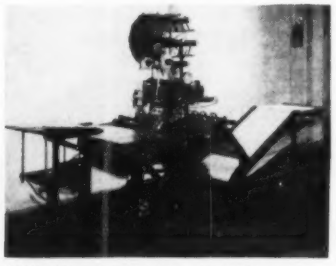
Stibbe

San Giorgio

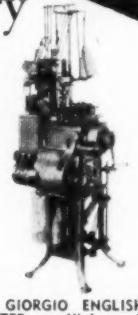
Everything for the Knitting Industry



STIBBE RIB KNITTER — Introducing the world-famous Stibbe interlock rib knitter from England. Automatic oiler for cylinder and dial cams. Capstan electronic stop motion. Forty years of experience building precision knitting machinery went into this high-speed unit.



BOWMAN AUTOMATIC TRANSFER MACHINE—High-production, completely automatic transfer machine that applies multiple transfers simultaneously. Electronically positions socks for correct impression.



SAN GIORGIO ENGLISH RIB KNITTER — High production English rib machine. Low initial cost, low operating cost. Continuous, trouble-free operation . . . prompt delivery.

MORRIS SPEIZMAN CO. INC.
508 W. Fifth St. Cable: Morspeiz Charlotte 1, N. Car., U. S. A.

SEE

NOONE

FOR YOUR INDUSTRIAL TEXTILE REQUIREMENTS

SLASHER CLOTH

All weights and constructions supplied
All wool or part synthetic
Special chemical treatments

CLEARER CLOTH

All wool or cotton back

CARD CLOTHING FOUNDATION

Cotton warp or linen warp
All standard widths and weights

LAPPING CLOTH

Manufactured to exacting standards for uniformity
Both cotton warp and linen warp
Part synthetic available

ROLLER CLOTH

Complete range of types, sizes, and weights
All wool or part cotton

OTHER SPECIALTY WOVEN FABRICS

Developed at your request

KENWOOD TEXTILE PRODUCTS

NOONE INDUSTRIAL FABRICS DIVISION—KENWOOD MILLS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

Fig. 310 Lap Truck

Fig. 870 Box Truck

No. 88-5XRF Caster with thread guard

No. R10HDW Demountable Rubber Tired Wheel

Nutting TRUCKS and CASTERS

for every purpose in the textile industry

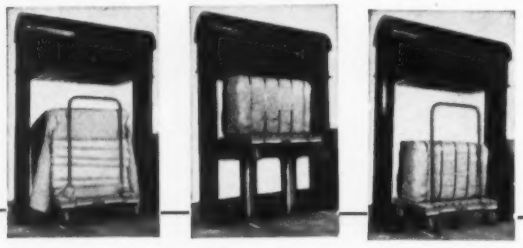
Fig. 360 BALING PRESS TRUCK

Frame fits over press to take pressure. Slats properly spaced for steel-strapping. Platform 42 x 36 or 46 x 36, height 11⅜". Other sizes available.

Left, below: In position over pressure block, of hydraulic press, ready for compressing and strapping.

Center, below: Handle removed, bale compressed and strapped, ready to be lowered.

Right, below: On floor, handle replaced, ready to roll.



Your production program can be quickened and your handling costs reduced by a properly engineered materials handling system. Why use trucks that only approximate your needs, when there's a Nutting for every purpose? More than 1,000 truck designs have been developed in the Nutting line to suit each type of work. Call in a Nutting sales engineer, and let him help you select the right equipment.

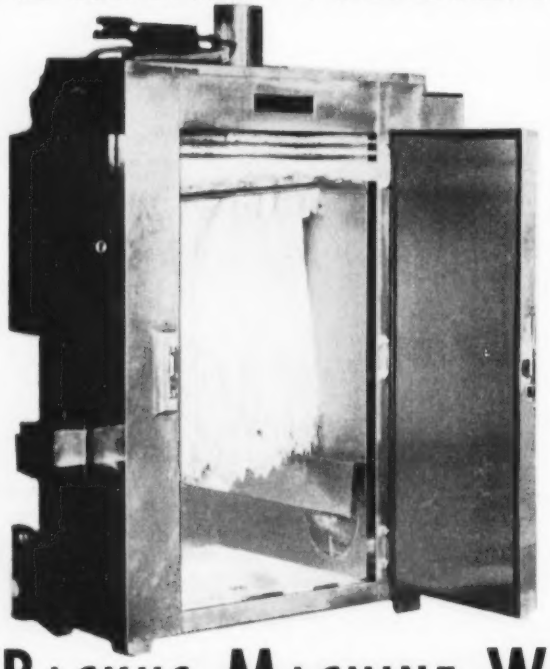
Representatives in Principal Cities—Consult your Telephone Directory under "Trucks" or "Casters". Or write direct for literature.

Since 1891

Nutting Truck & Caster Company

3150 Division St. West, Faribault, Minnesota

Backus HOSIERY CONDITIONER



proven in 350 mills to reduce production costs

FOR 15 DENIER NYLON

FOR SMALL & MEDIUM SIZE MILLS

Yes—proven in 350 mills in 21 countries to reduce production costs. Low initial cost. Completely automatic. Low power requirement. Capacity 320 doz. in 8 hours. Shipped ready to operate. Construction all aluminum. Adjustable controls to meet any conditioning requirement.

BACKUS MACHINE WORKS, CARLSTADT, N. J.

Why MARTIN WOOD SHELLS

with never rust malleable aluminum caps

never split from steam or dampness

• ROLLS •

Martin's rolls are manufactured with full length square steel shafting, or with gudgeons driven in the ends. Square-end shafting turned round to fit bearings.

Martin's wood shells are made from solid, one-piece seasoned stock—not two or four pieces glued together. This eliminates splitting from steam or dampness. Shells are available in sizes 3½", 4½" and 5½" diameters, also special Extractor Shells; and Ribbon Blocks.

EST. 1880

Adolph Martin Sons, Inc.
Original Manufacturers of
PATENT SOLID WOODEN SHELLS and ROLLERS
10-20 Linden Street, Passaic, N. J.
Telephone PRescott 9-0484, CABLE ADDRESS "NITRAM"

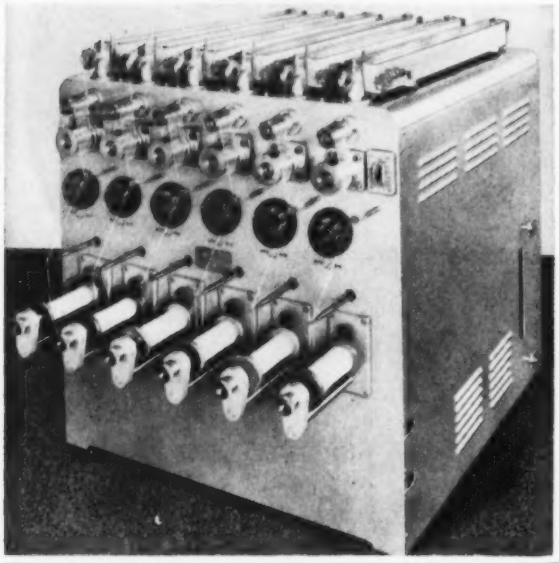
Write for quotation on your shell and roll requirements

for: PRINTERS • BLEACHERS • DYERS • PAPER • RUBBER • Rayon and Nylon • MANUFACTURERS • MACHINE SHOPS • CARPET and COTTON MILLS

CONTROL-STRETCH YOUR . . .

SYNTHETIC YARNS

UP TO 300 YDS. PER MIN. STRETCH-STABILIZED ON NEW UNIT!



It is now possible to stretch nylon and Dacron threads with our Model 115 hot-stretching machine. This unit measures 5x4x4 ft. and will reduce the elongation of nylon threads to approximately 12%.

Yarn from 140 to 1,000 den. is stretched at 50 to 300 yds. per min. on each of the six spindles. Each spindle is individually driven with a slow start and infinitely variable speed control. Incoming yarn tension is controlled by Kidde Tensometers. Yarn-break controls are provided.

The machine is completely self-contained, with the drive and the automatically controlled Dow Therm heating system enclosed in the base. The spindles are driven by individual d.c. motors, with the conversion units required to obtain d.c. power enclosed in the base.

In operation, the yarn is stretched between rolls at the front and rear of the machine and is heated to a temperature of 400° F. by contact with the heater on top of the machine. The level-wind mechanism is driven by a hydraulic cylinder.

Single spindle models also available to stretch cord up to 18,000 denier.

W. M. STEELE CO., INC.

171 FREMONT ST., WORCESTER 3, MASS.

SPECIAL and TEXTILE MACHINERY *for* NARROW FABRICS

CARDING MACHINE

Cards wound on this machine are easily removable from holder. Piece length is accurately measured and machine stops automatically when desired length has been wound. Machine is made to wind bias binding, blanket binding, silk and tinsel ribbon, shoulder strapping and elastic and lingeries braid to each customer's individual requirements.

Also made with traverse wind.

KNIFE TYPE HANKING MACHINE

Machine is made to wind hank to customer's requirements. Hanks wound on this machine are easily removable from holder. Hank length is accurately measured and machine stops automatically when desired length has been wound.

PLAIN BLOCKER

Equipped with flat or V Belt drive. Interchangeable chucks are made to meet individual requirements. This machine is Ball Bearing throughout and is made in varying widths between flanges.

MEASURING MACHINE

This machine is used in conjunction with our plain blocker and is made with various drum widths to meet individual requirements. Piece length is shown on measuring device in units of one-eighth yards.

WARPING MACHINE

This machine is built to the requirements of the individual customer. It is made to operate at any required speed and to accommodate any given size or number of spools. The machine is capable of seven traverse speeds and changing from one speed to another is simple and rapid. The machine is equipped with measuring device and tension rolls.

SPREAD WARP MACHINE (Slow Speed)

This machine is made to produce warps of varying diameters and beam lengths. It is equipped with a measuring device and tension rolls. Each machine is made to meet individual requirements.

BEAM OR SPOOL WARPER (High Speed)

Made for either traverse or spread warps. Can be built to accommodate 1-48" Beam or 4-12" beams. This machine can be built to accommodate eight spools. Can be run at speeds up to 600 yards per minute.

SPREAD WARP MACHINE (High Speed)

This machine is made to produce warps of varying diameters and beam lengths at high speed. Machine is equipped with measuring device and tension rolls, and is built to customer's specifications.

AUTOMATIC STOP BLOCKING MACHINE

Equipped with flat or V Belt drive. Interchangeable chucks are made to meet individual requirements. Machine can be made to handle any width of material. Stop mechanism accurately measures proper length of material. Ball Bearing throughout.

SLITTING MACHINE (Acetate Cloth)
Patented

Automatic, electrically controlled heated knives. Slits material from one-quarter inches up.

Also: Roll Up Machines
Spooling Machines
Let Off Stands

Complete data and pictures on all machines mentioned here sent promptly on request.

E. F. HILL MACHINE CO.

Engineers and Builders

Successors to

1893 CHAS. H. KNAPP CO. 1953

181 EAST SEVENTH ST. PATERSON 4, N. J.

STERLING
ENGINEERING & MANUFACTURING CO.

WILKES-BARRE, PENNA.

Successor to Johnson Eng. & Mfg. Co.

SPECIALIZING IN STAINLESS STEEL PRODUCTS FOR THE TEXTILE INDUSTRY

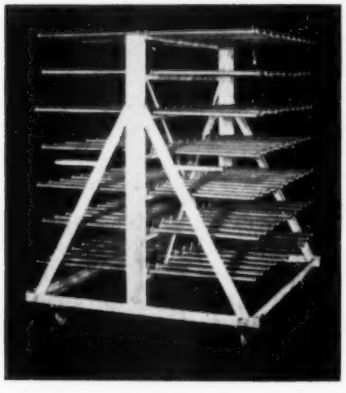
STERLING SELF-STACKING BOARDS

Stainless Steel or Cadmium Plated

U.S. and Foreign Patents and Patents Pending.

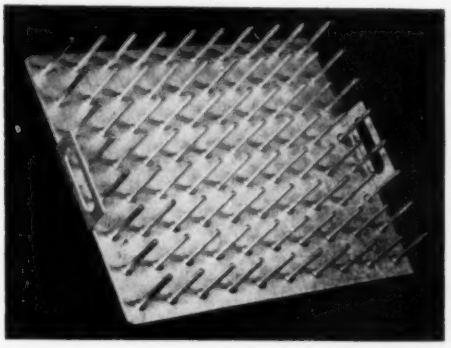
The new Sterling Self-stacking Board made of Stainless Steel eliminates your rust problem forever. When stacked, the Sterling offset handle locks the boards into a unit of any height that can be easily moved on a skid. The boards are strong, lightweight and made for durability by electric welding.

STERLING CAKE DRYING TRUCK



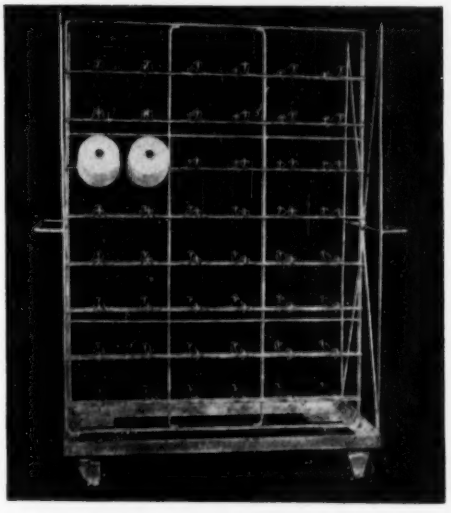
Made to your size specifications—to fit your dryer — these Sterling trucks combine a cadmium plated steel frame for strength with lightweight aluminum arms to hold the yarn.

STERLING BOARDS FOR AUTOMATIC QUILL-WINDING MACHINES



The lightweight, easy-to-handle aluminum base can be fitted with either aluminum or stainless steel pins to meet your needs. These boards are available in the standard size shown (12" x 15") or in any special size you desire.

STERLING YARN HANDLING TRUCKS



Provide efficient transportation of yarn on cones, tubes or bobbins. Made with any number of holders or pins in any spacing to suit your individual needs.

SPECON

Variable Speed—Infinite Range
Electrical Differential (ED) Drive
for
CENTER TYPE WEB WINDERS

Automatic Control of Tension & Speed—Any Build-Up
No dancer roll required
Stepless smooth operation at all speeds from Zero to Maximum
Increased torque at slow speeds

• • •

Send details of (1) Max. tension (2) Max. f.p.m. (3) Roll build-up for recommendation and quotation

• • •

Speed Control Corporation

Variable Speed Drives of Infinite Range for Industrial Application

1430 EAST 289TH STREET Wickliffe - Ohio

For More Efficient WASTE PROCESSING

Specifications:
Length, with 5' apron, 186"; width 60", including cylinder shaft; height 52"; weight 2500 lbs.

K&D SINGLE CYLINDER WASTE MACHINES

- WASTE SAVING
- SPACE SAVING
- COST SAVING

Requiring only half the floor space and half the power, K & D Single Cylinder Waste Machines provide double action on a single cylinder, with better results than ordinary waste machines. Eliminate two-thirds the usual gearing, with fewer stops, less down time, less maintenance. Reduce fire hazards. Reduce damaged fibers. K & D Waste Machines produce a larger percentage of usable fiber.

To Whip the HARD Waste Problem Use K & D TANDEM APPLICATION

For processing "Hard Waste" in cotton, rayon, or wool, use our TANDEM APPLICATION—combining two or more units of the K & D Single Cylinder Waste Machine into one housing, with one feed apron and one exit apron. Far more efficient for the purpose than conventional machines with twice the cylinders.

Specifications:
Length: 16' 3" with 5' Apron
Width: 30" at base; 60" at cyl. shaft
Height: 52"
Weight: 5000 lbs.

WRITE FOR COMPLETE INFORMATION, LITERATURE AND PRICES

KIRKMAN & DIXON MACHINERY CO. P. O. BOX 1027 GREENWOOD, S. C.

F-5 HOPPER FEEDERS SARGENT COMBS

LOGEMANN BROTHERS CO.

(Established over 80 Years)

3104 W. Burleigh St., Milwaukee, Wis.

LOGEMANN BALING PRESSES

All Sizes and Types for All Purposes

TEXTILE plants having special baling-problems are invited to outline their conditions and requirements in detail, so that experienced LOGEMANN baler engineers may make recommendations and offer the proper type of equipment. Inquiries should specify the character of material to be baled, preferred size or weight of bale, and quantity to be baled in a given period of hours.

YARN BALERS

SPECIAL FEATURES: (1) Easy to load: Individual doors facilitate piling of skeins; after lower doors are closed, top door in front permits complete filling of box. (2) Greater pressure: The toggle-type baler develops more power than other mechanical presses, therefore produces higher bale density. (3) Speed: Press completes its stroke in less than 35 seconds, without complex gear shifts, belt shifts or motor switching. (4) Convenient to burlap: Doors open all around, burlap can be completely sewed on the bale while under compression.

BALE SIZE: For yarn baling, Model 26-MS, making bales 36″ x 24″ x 24″, is generally accepted as standard, but variations in bale dimensions are obtainable where such appear desirable.

OPEN BALERS

RIGID CONSTRUCTION: Heavy angle-iron side frames and I-beam stress members insure far greater rigidity than the rod-type corner posts. Drive frame has no swinging members eliminating complicated belt or electrical connections. Designed with liberal factor of safety—much higher pressure ratings would be permissible.

TOGGLE OR HYDRAULIC: Both types built in wide range of platen dimensions and clearances to suit requirements. Toggle-lever type either belt or motor-drive. Hydraulic units complete, including pumps, to give any speed and pressure desired.

PORTABLE TRUCKS: Either type can be built with tracks for portable trucks on which material can be stacked, drawn into press for baling, and finished bale transported to storage or shipping platform.

POWER BOX BALERS

SIZES—TYPES: Built in many box dimensions, one-floor or through floor type, upstroke or downstroke. Can be built with movable boxes, rolling on tracks, utilizing several boxes with one master press.

SPEEDY & POWERFUL: Without special mechanisms or shifting device, and at uniform motor speed, compression platen moves at high speed through the first part of its stroke, gradually slowing down as extreme pressure is applied. On return stroke, action is reversed. High bale production easily obtainable. Utilizing leverage in place of direct pull, toggle presses make tighter bales, with less horsepower, than any other mechanical baler. Upkeep and maintenance are far lower, due to the few moving parts.

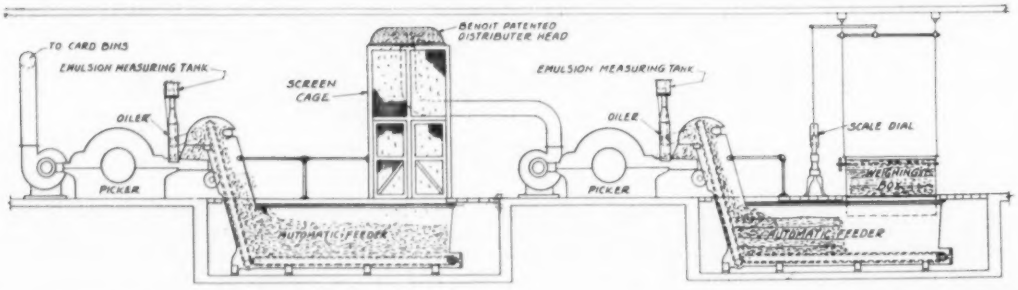
HYDRAULIC BALERS

Outstanding advantages are simplicity, extremely low maintenance cost, freedom from usual operating troubles, and controlled pressure.

SPECIAL FEATURES: Skilled help or special training not needed to operate these presses with complete safety. No other type produces equal bale density. Yet maintenance is far less. Ram, platens and doors only moving parts. Pressures can be accurately controlled. Doors release and expose three sides of bale for convenient wiring and burlapping.

ALL SIZES: Bale dimensions and weights to meet varying requirements for different materials can be obtained. Either up or down stroke to suit. With pump of proper size and deep press box, extremely high bale outputs are readily attained.

BENOIT WOOL BLENDING SYSTEMS PATENTED



(TANDEM WOOL BLENDING UNIT)

A continuous wool blending system which eliminates laying down batches and makes uniform blends as each 100 lbs. of wool dumped into the first feeder will have the correct proportion, by weight, of each kind or color of stock in the blend. The two units are run in tandem and after the stock is dropped into the weighing box it is not handled again until taken from the card bins. The primary and secondary units can be placed end to end or side to side.

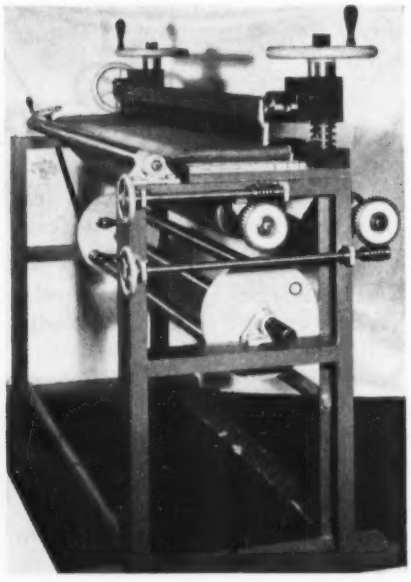
60,000 to 70,000 lbs. per week of 40 hours is average production from Tandem Blending Units on colored blends where picker sticks must be cleaned when changing from one color mixture to another. From a Single Blending Unit where the stock is run through same Unit twice, production would be 30,030 to 35,000 lbs. per week of 40 hours.

WRITE FOR MORE COMPLETE DETAILS

Tandem Units Side By Side

O. A. BENOIT & COMPANY
34 SALEM ST. LAWRENCE, MASS.

Metallic and Colored Coatings without . . .



"STRIKE-THROUGH" even on low-count linings!

The Cadgene Coating Machine can be used for various metallic and colored coatings on the reverse side of fabrics without showing on face of the fabric. Tension on the easily adjusted blanket furnishes the exact pad resiliency required for various fabrics.

To permit fabrics to ride pad correctly, front bar is mounted on eccentric which allows operator to obtain proper leveling of fabric.

Coating head is mounted in front of either a dryer or dry cans as desired. Dryer or dry cans can be furnished or we can adapt Coating Machine to your own.

OTHER CADGENE EQUIPMENT

Dryers of all types including Gas Heated Units for drying and curing as well as nylon setting. Stainless Steel Dye Becks and special machines of all types also available.

CADGENE MACHINERY COMPANY, Inc.

Fifth Avenue and McClean Blvd. *Phone: MUlberry 4-6577* **Paterson 4, New Jersey**

BABBITT STEAM SPECIALTY COMPANY

Manufacturers of Industrial Specialties

NEW BEDFORD, MASSACHUSETTS

Distributors in Principal Cities

. . . Gives Instant, Easy Control of VALVES From the Floor

Get positive, efficient control of any overhead — otherwise inaccessible — valve right from the floor. No expensive apparatus, no switches, no costly detours to bring overhead piping to floor level — because every valve is in easy reach when you use low-cost Babbitt Adjustable Sprocket Rim with Chain Guide. Range of 10 adjustable sizes fits all valve wheels from 2 to 30 inches diameter, with rising or non-rising stems. Only four simple, quickly-assembled parts. Easily assembled and installed, ready to operate in a few minutes. Ask for details — find out why more than 1½ million units are already in use all over the world.

Gives You Faster, Longer-Lasting LOWER-COST PAINTING

Test Babbitt Formula 67 on the toughest job you have, indoors or out — preferably where all other paints have failed. One coat — no primer, no finish coat needed — covers, seals, and protects metal, wood, brick, unglazed tile, glass, cement, concrete and other masonry. Ask about our trial-size order, enabling you to try before you buy in standard amounts.

STRENGTH

For Most Economical, Longest Service

Textile maintenance men know that the weak spot in most loom cranks is in the bends or arms. Right here, at the weakest point in ordinary cranks, Babbitt Cranks are made the strongest.

This important design improvement is made possible by a bending, upsetting and squeezing process, carried out by a special Babbitt machine. Under this process, the corners are "upset," bunching metal at the bends where most strength is needed, rather than stretching the metal to make bends as in ordinary cranks. Nearly 50% more metal is introduced into the bends.

The upset process is metallurgically sound, as it leaves the fibre of the iron intact, whereas stretched bends break the fibre and weaken the iron.

Many years of use in the textile field have proved the Babbitt crankshaft to be practically unbreakable, giving smoother service and longer life at lower total life cost.

In all sizes for all looms — Babbitt Crankshafts are furnished for practically all makes and sizes of looms. Common styles and sizes are carried in stock. Special attention is given to replacements necessary for "orphan" makes of looms.

Our service includes: whole new cranks, crank ends, repairing broken cranks, and finishing.

Write to us for detailed descriptive literature on Babbitt Steam Specialty Co. products. No obligation!

MATERIALS HANDLING EQUIPMENT *by* Vesco

CASTERS and WHEELS

Casters and wheels manufactured by Divine Brothers Company, offer economical, trouble-free materials handling service. Truck casters are available for light, medium, medium heavy, heavy and super heavy duties. Casters for light dollies, chairs, socket casters and special applications also available. Suitable replacement wheels for all types of casters can be furnished.

LIFT TRUCKS

Lift trucks manufactured by Lift Trucks, Inc. are Stuebing Designed, Stuebing Engineered, Stuebing Built. The RED ARROW is the most economical hand lift truck you can obtain, yet it features top quality, speed, and unusual ease of operation. In time and manpower saved, these lift trucks pay for themselves many times a year.

There is a hand or electric truck to fit your job. Contact us for a demonstration.

SKIDS, DOLLIES

Semi-live Skids, Barrel Skids, Floor Trucks, Transfer Trucks, Roll Trucks, Box Trucks, Pry Bars, Pallet Boxes, Hydraulic Skid Trucks.

The Skid with "Safety" Construction

The HANDY for furniture and similar items.

The HAULER for cases, crates, tote boxes, etc.

The HUSKY for general use throughout the plant.

STRAPPING TOOLS AND SUPPLIES

A complete line of tools, strapping, seals, and accessories manufactured by the A. J. GERRARD & COMPANY are available. These are unequalled for efficiency and economy in SHIPPING and STORAGE.

The BULKBINDER strapping cutter (illus.) is a lightweight, easy-to-use cutting tool which requires only slight pressure with one hand to cut through heavy, flat steel strapping. Because of its versatility, it has become an indispensable tool in textile mills and warehouses.

Southern Representative For All Types Of Handling Equipment

VESCO INC. 5023 WILKINSON BLVD. • CHARLOTTE, N. C.

Manufacturers of Custom Casters for the Textile Industry

"Circular Jacquard"

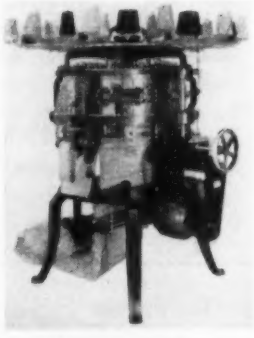
KNITTING MACHINES

for

- **Efficiency**
- **Versatility**
- **Economy**

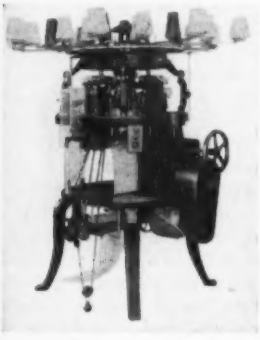
MODEL TJ-12

"Circular Jacquard"
(Rib Jersey Knitting Machine)



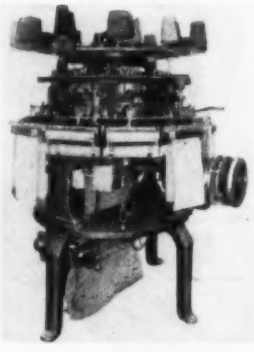
MODEL LA-12

12 Feed "Circular Jacquard"
Plain Links & Links Machine



MODEL TAI

Interlock Rib and Plain Jersey
Transfer Machine



MODEL LH-6

6 Feed Links & Links Machine
with Jacquard Attachments

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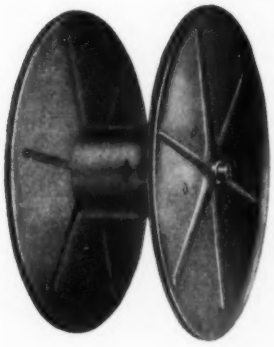

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HIGH STRENGTH — UNBREAKABLE

For all types of warps Cotton, Silk, Synthetic Yarns and Rubber thread.

Designed for both tape and straight winding.

Sizes and dimensions to meet individual requirements.

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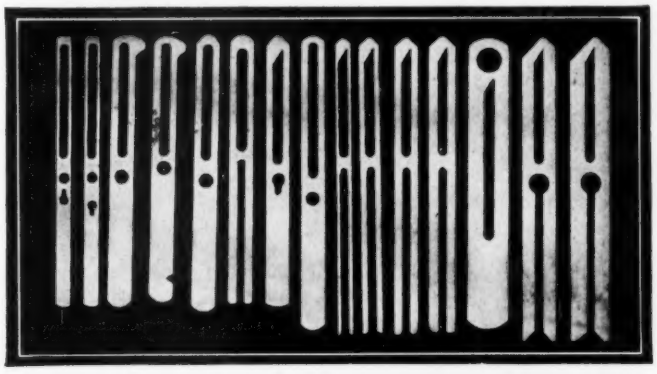
For all makes of Mechanical and Electrical Warp Stop Motions



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#2BX Carrier
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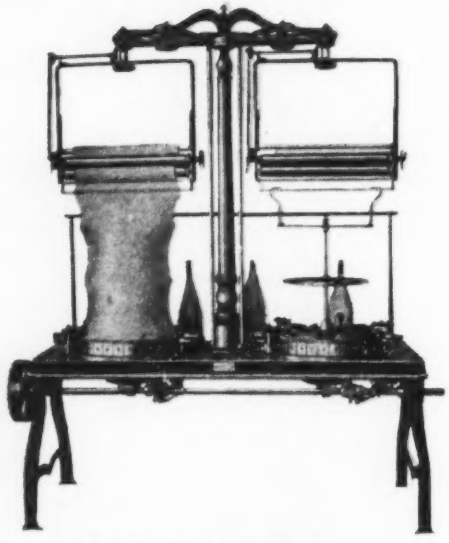

Spring Needle Knitting Machine

Made with feeds for plain, eiderdown, stockinette, astrachan and a great variety of fabrics. Stop-motions are applied to each cylinder of the machine and, if desired, to each thread in process. A striping unit is available for the production of fabrics such as plaids.

Machines are made with cylinders from 12" to 36" in diameter. Usually 2 cylinders are applied to a table with 6 table sizes available.

It is possible, within reasonable limits to operate cylinders of different sizes on the same table. To change the gauge of a machine all that is required aside from changing the needles is a new top and knitting wheels of the gauge desired.

Our 22" and 30" tables are the most popular sizes. data on these sizes follow:

DATA OF SPRING NEEDLE MACHINES

Size of table	22"	30"
Floor space required, double backboard	7' 8"x4' 2"	8' 8"x4' 7"
Floor space required, single backboard	7' 2"x4' 2"	8' 2"x4' 7"
Overall height	8' 10"	10"
Height of top of cylinder	34"	34"
Take up capacity width and diam. of fabric roll	25"x15"	35"x23"
Horse power required	½	¾
Net weight	1550	2200
Shipping weight, domestic	1750	2500
Shipping weight, foreign	2200	3000
Shipping space cubic feet, foreign	80	100

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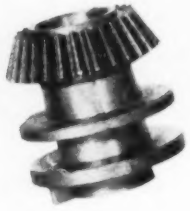

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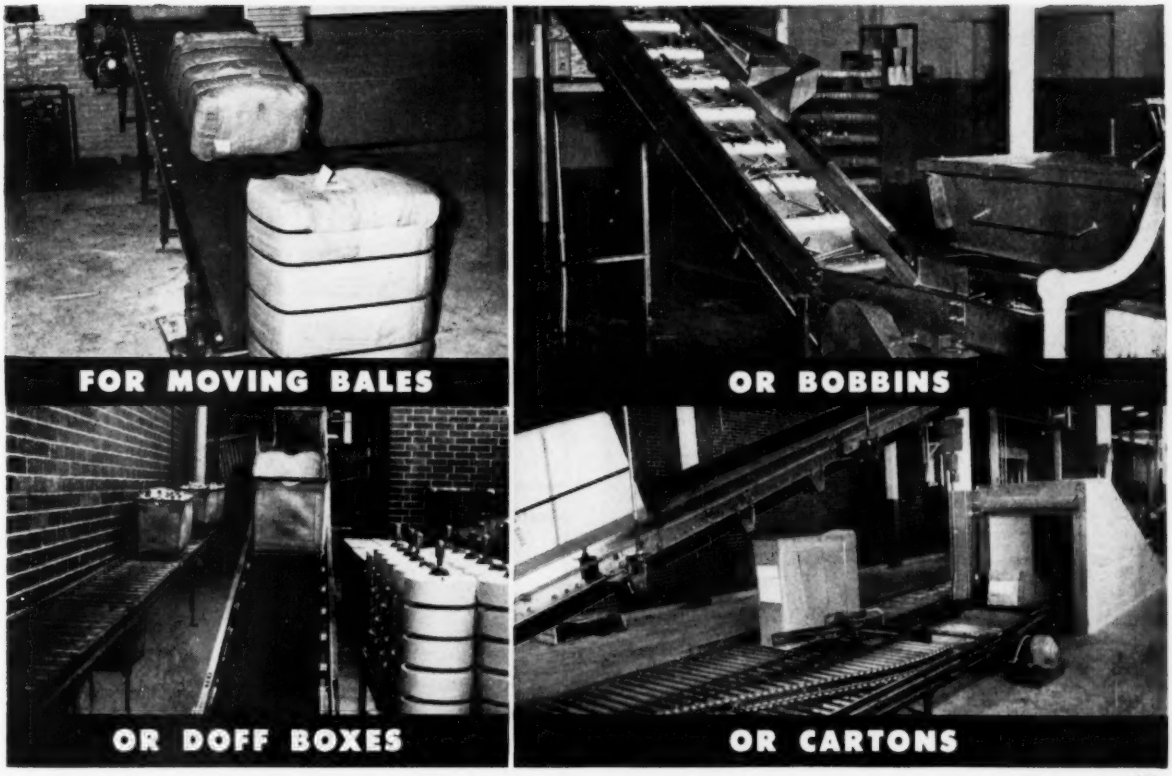

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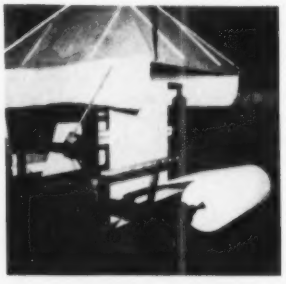

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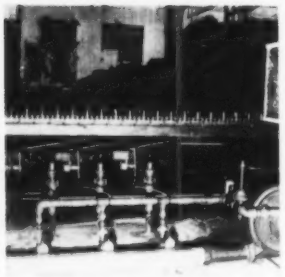

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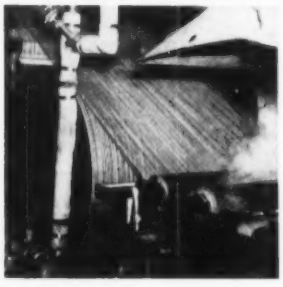

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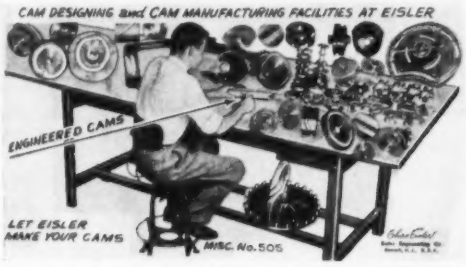

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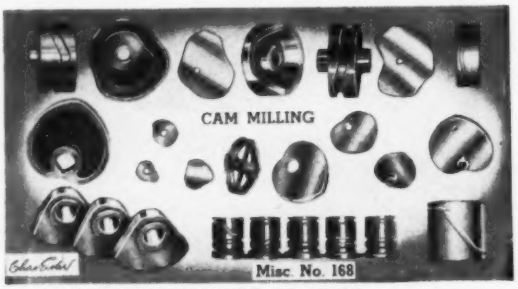

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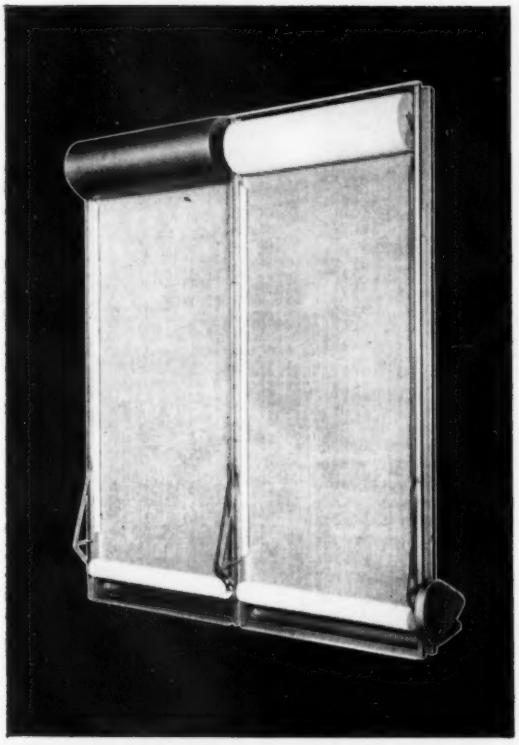

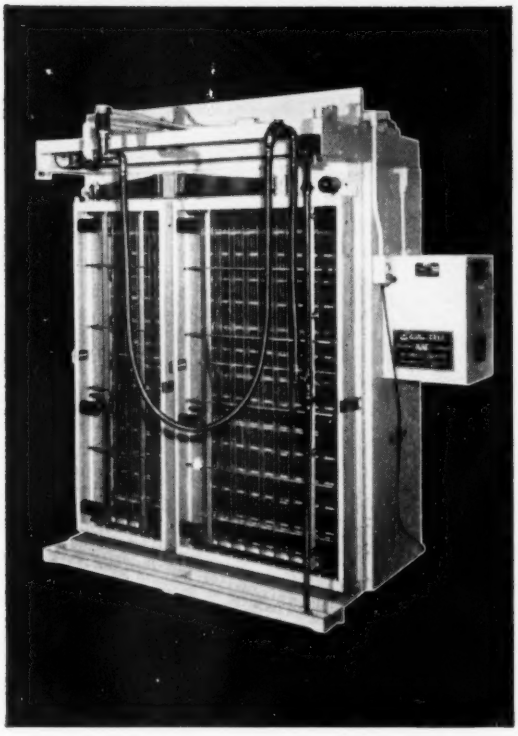

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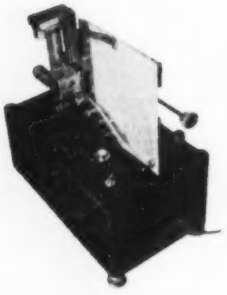
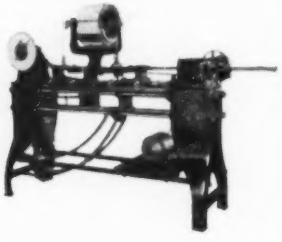


Scott Clemson Flat Bundle Fibre Tester



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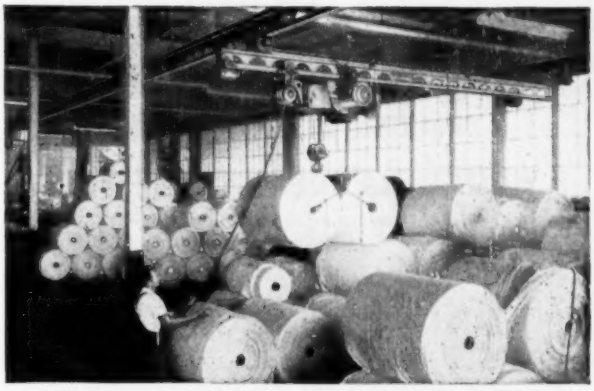

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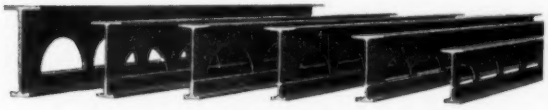
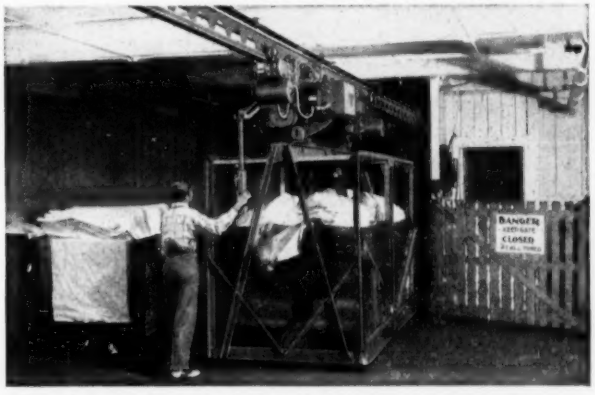
Cleveland Tramrail raised-tread long-wear rail.

Cleveland Tramrail consists of standard items such as rail, switches, carriers, cranes, hoists, grabs, etc., which can be combined in a thousand-fold ways to serve nearly every materials handling requirement.



Cleveland Tramrail Archbeam in seven sizes for various loads and conditions.



Two floor trucks loaded with cloth are transported at a time, to a distant point without any operator accompanying, with this Cleveland Tramrail automatic dispatch system.

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Hand propelled carrier built for long life and easy operation. Wheels have hardened tread and flange; bearings are double race type.

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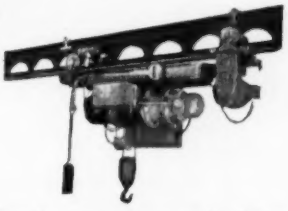

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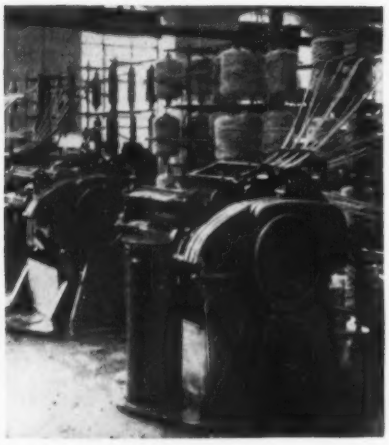

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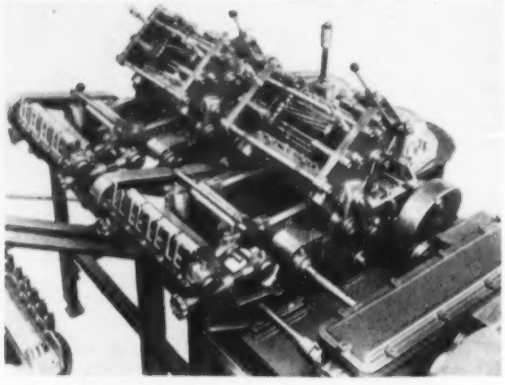

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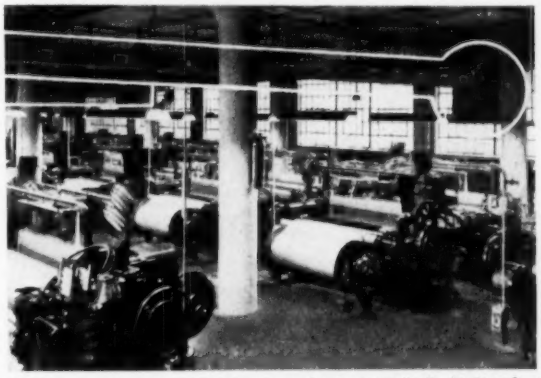

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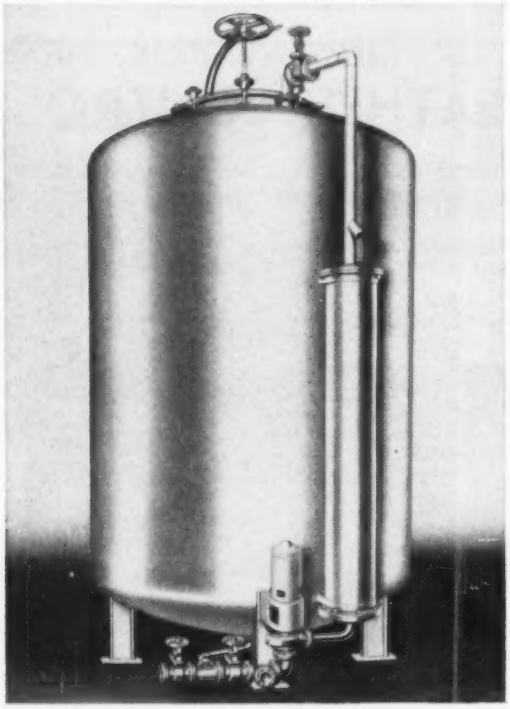

The newly-designed ALLEN stainless steel KIER is a complete package unit as pictured above.

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   All parts are more easily accessible. The pump and motor are off the floor away from possible floor and moisture conditions.

For boiling or bleaching all types of cotton goods from gauze to heavy twills, the new Allen "Unit-Package" kier has no rival for efficiency and low-cost operation. Sizes up to 5 ton capacity.

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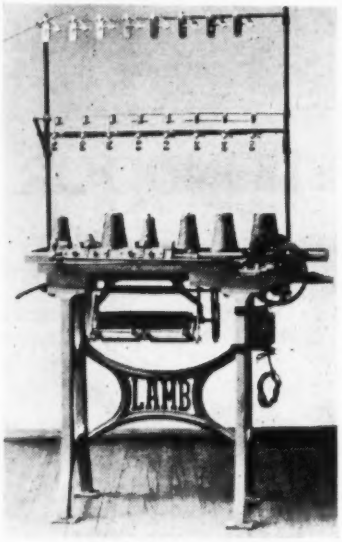

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WHY Textile Mills use ®STROBOTACS

Few textile mills had even heard of the Strobotac a decade and a half ago. Today the Strobotac® is used in thousands of mills as an indispensable production tool. Why this wide acceptance?

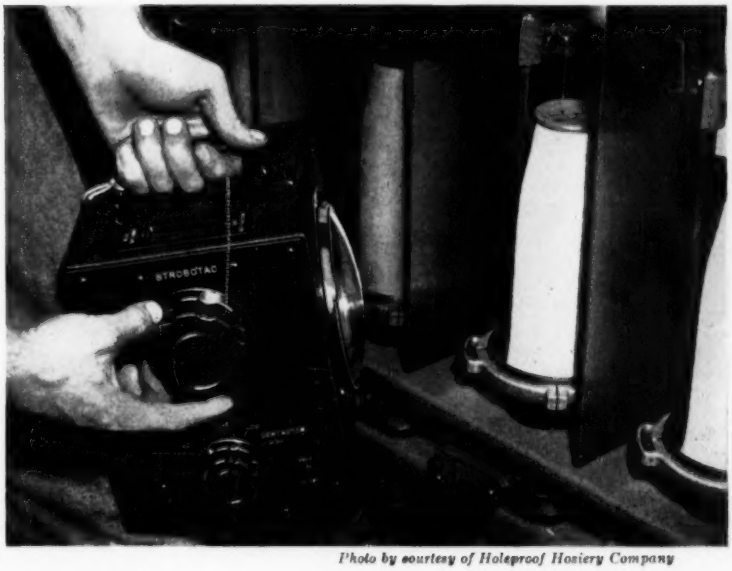

Photo by courtesy of Holeproof Hosiery Company

The answer is the ability of the Strobotac to make rapidly moving machines appear to stand still, or to operate in s-l-o-w motion. High-speed machine operations may be seen in detail as though operating at a fraction of an rpm, while actually running at rated speed . . . at *any* speed from 60 rpm to 100,000 rpm!

Gears may be checked for wear . . . speed of rapidly revolving spindles and twisters may be measured accurately . . . slack tapes, dragging brakes and other defects are easily detected.

The Strobotac, with its recurring light flashes, the rate of which is controlled by a single calibrated knob, permits observation of every machine detail without affecting the normal operation of the part being inspected. There is no mechanical or electrical connection between the machine and the Strobotac.

In the weave room, examination and alignment can be made on such operations as entrance of shuttle into shed, flight and box of shuttle, looping of filling, contact of filling feeder and bobbin, transfer of bobbins, action of cutters, flexing of picker sticks, and countless other operations.

Type 631-BL Strobotac. . . a general-purpose electronic tachometer . . . complete and ready for operation from any 110-volt, 60-cycle a-c line: **$150.00**

Range — *60 to 14,400 rpm direct reading — measures to 100,000 rpm by use of multiple images*

Accuracy — *1% of dial reading over most of range*

Flash Duration — *20 to 40 millionths of a second*

Portability — *dimensions are 7½ x 8¾ x 9⅞ inches — net weight is 9½ lbs.*

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Write for the 8-page STROBOSCOPE Bulletin which describes all of General Radio's stroboscopes.

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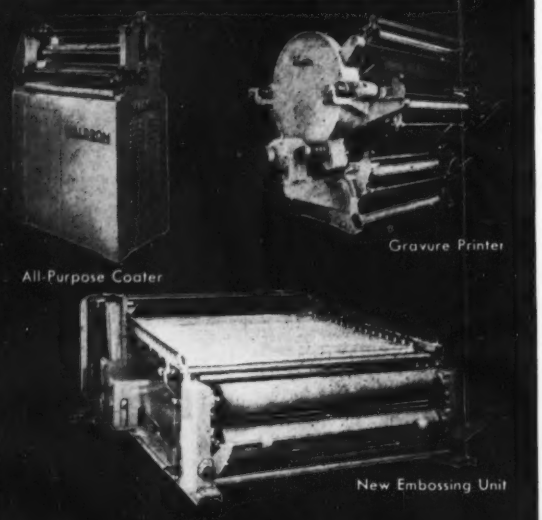

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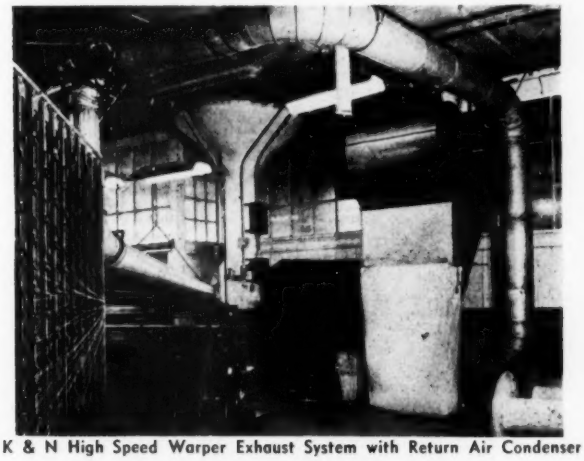

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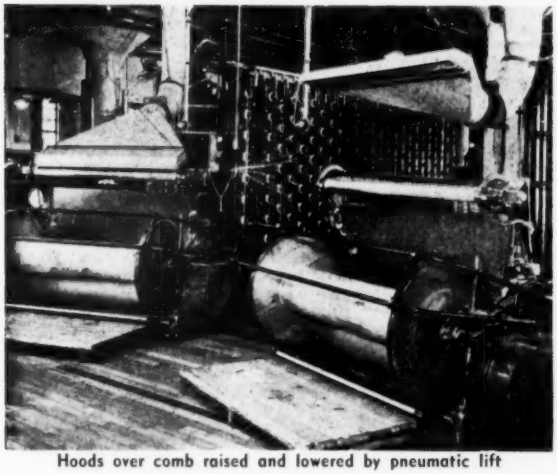
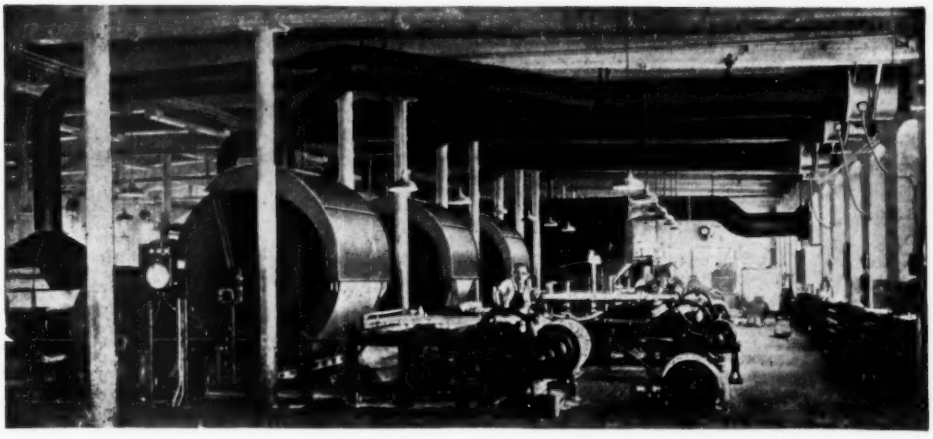


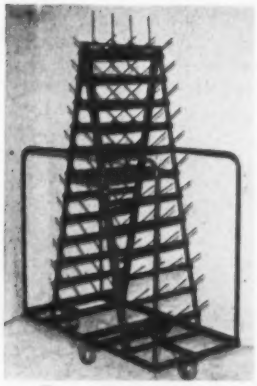
Hoods over comb raised and lowered by pneumatic lift

K & N Traps to catch foreign substances in blowing systems



K & N Individual Slasher Exhaust Systems

TRUCKS
for the Textile Industry



Excel No. 3400 Pin Truck for Twister Bobbins, etc.

CAPACITY: made to customers specifications to carry size and quantity of bobbins desired.

CONSTRUCTION: Angle iron base and A frame. Cold rolled steel pins, pipe handles, and guard rail.

Electrically welded throughout (except casters) for strength and rigidity.

Ball bearing pressed steel casters are bolted onto base.

FINISH: Painted Saco-Lowell blue-gray.

Excel No. 2500 Corrugated Metal Bobbin and Yarn Truck

CONSTRUCTION: 20-ga. galvanized sheet metal corrugated for extra strength. Spot welded, riveted and electrically welded for permanent strength and durability. One inch non-rusting tubing top-rail. Solid or slotted metal bottom.

Best quality construction and workmanship throughout.

Also:

No. 100 Loose Doff Box
No. 200 Doff Box Frames
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No. 400 Slatted Yarn Truck
No. 500 Metal Yarn Truck
No. 600 Slatted Conditioning Truck
No. 700 Waste Can Truck
No. 800 Platform Truck
No. 900 Metal Conditioning Truck
No. 1000 Fibre Truck
No. 1100 Steel Lap Truck
No. 1200 Utility Fibre Truck
No. 1300 Utility Metal Truck
No. 1400 Comber Lap Truck
No. 1500 Pin Board Truck
No. 1600 Bale Opening Truck
No. 1700 Cone Truck
No. 1800 Beam Truck
No. 1900 Sliver Can Truck
No. 2000 Swing Bed Doff Truck
No. 2100 Battery Filling Truck
No. 2200 Rack Truck
No. 2300 Fibre Truck
No. 2400 Stainless Steel Dye House Truck
No. 2600 Textolite Dye House Truck
No. 2700 Special Fibre Roving Truck
No. 2800 Corrugated Round End Metal Truck
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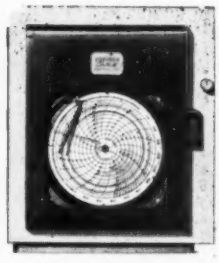
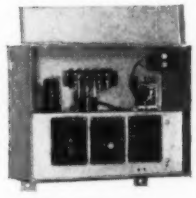
T-400 Room Thermostat

H-103 Room Humidostat

V-108 Three-Way Mixing Valve (Rubber Diaphragm)



H-411 Aspirating Cabinet



H-1550 Electronic Humidostat

THERMOSTATS: Johnson Room Thermostats are furnished in a wide selection of adjusting features allowing accessible, key or closed adjustment of the temperatures to be maintained. All room thermostats are equipped with highly sensitive bimetallic temperature sensing elements.

Immersion, insertion and remote bulb thermostats are provided for the control of temperatures in ducts, tanks and enclosed chambers. Remote bulb thermostats have liquid-filled capillary systems with various styles of bulbs. Standard capillary length is 8 ft., with 15, 25, 35 and 50 ft. lengths available on special order.

HUMIDOSTATS: Johnson humidity control instruments are affected by the amount of moisture in the air and maintain any desired relative humidity. Available in room and insertion patterns with bi-wood, bow-wood, wood cylinder, hair, horn or animal membrane elements. The most sensitive control within 1% relative humidity, even as high as 95% at 100° F. Johnson Humidostats control all types of humidifiers.

HUMIDIFIERS: Johnson "steam grid" type (perforated pipe supplied with low pressure steam) or pan type (copper evaporating pan, brass heating coil and float control) are dependable humidifiers for central fan systems.

VALVES: Simple and rugged. Diaphragms of special molded rubber, resistant to age and oxidation, operate the valve stems against the pressure of dependable springs. No complicated moving parts. Made in all standard sizes and patterns. Normally open or normally closed. Also, three-way mixing and bypass valves. For steam, water, other liquids and gases. Where maximum power is required for repositioning at the slightest demand of controlling instruments, Johnson molded rubber diaphragm valves are fitted with Johnson's dependable Pilot Positioner, for smooth proportional operation, independent of friction and pressure variations.

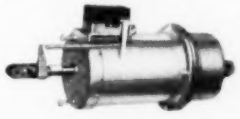
ASPIRATING CABINETS: Cabinets are equipped with many combinations of controlling and auxiliary devices which are required to provide accurate control of temperature and humidity. Cabinets are provided with blowers to insure positive circulation of air over the controller elements and protect the controllers from dust, lint and unauthorized tampering. Air gauges are provided in the air connections to permit checking the functioning of the controllers at all times. An 8" recorder keeps an accurate record of temperature and humidity at all times.

ELECTRONIC HUMIDOSTAT: Johnson Electronic Humidostats are highly sensitive electronic controllers designed for the accurate control of relative humidity. Available in two-position or proportional action models. Also available with pneumatic thermostat and solenoid air valve mounted in an Aspirating Cabinet for pneumatic control systems. Non-organic humidity sensing element of unusual accuracy does not require frequent recalibration.

DAMPERS: Galvanized sheet steel blades in flat iron frames with adequate bracing to form a rigid assembly. Finished in black lacquer. Special corrosion-resisting finishes on order. Monel metal, aluminum, copper, rust-resisting steel, etc. Brass pins in steel bearings or ball bearings. Angle iron frames optional.

DAMPER OPERATORS: Similar in principle to valves. Seamless metal or specially molded rubber diaphragm operates damper through suitable linkage. Various types of brackets. Distinctive Johnson "Piston-type" damper operators afford long travel at full power, a feature not found in other such controllers. With or without pilot mechanisms, as described above under "VALVES".

D-251 Piston Damper Operator

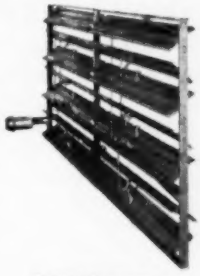


D-251 Piston Damper Operator with D-265 Pilot Positioner

T-800 Capillary Thermostat

T-901 Capillary Submaster Thermostat

V-105 Reverse Globe Valve V-501 Pilot Positioner



D-225 Proportioning Louver Damper

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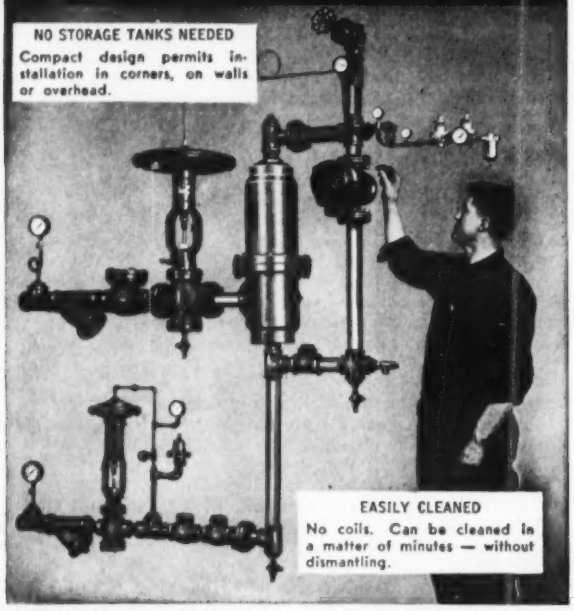
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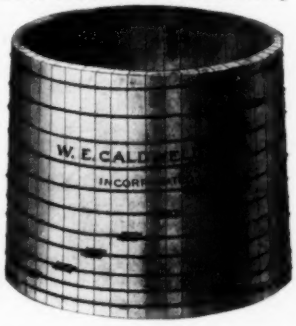

Specifications—Thickness—2 in. for 10,000 gal. or less; 2½ in. up to 20,000 gal.; 3 in. for larger sizes. Finished thickness to be ¼ in. less than above.

Standard Diameters of Round Tanks—are every 6 in. from 3 to 10 ft.; every foot to 16 ft.; and every 2 ft. above 16 ft.

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We make all shapes of tubs, tanks, and boxes for dyeing, bleaching, and sizing machines; either round, double-headed, rectangular, oval, half-round, or any other shape.

We specialize in linings of monel, lead, stainless steel, or any other kind.

Brass Outlet and Plug for Dye Tub

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Rectangular Wood Tank

STEEL TANKS

Our well-equipped structural and plate shops provide ample facilities for manufacturing all types of steel tanks from small galvanized stock tanks to elevated tanks of half-million-gallon capacity.

Whether they are shop-built or field-erected, we can furnish steel tanks for municipal water systems, industrial uses or private water supplies.

Thin galvanized tanks are recommended only in the smaller sizes and for intermittent or temporary use.

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For field-erected tanks, we have trained erection crews which operate all over the country.

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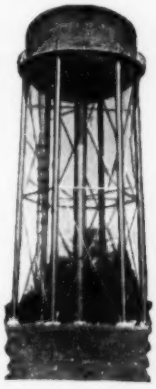
We have made a careful study of tank foundations and have developed a series of standard designs, which give the proper strength with a minimum of material.

TANK TOWERS

We build three types of towers:

Angle Towers—Built of heavy angle columns and struts, in all sizes from 12 to 102 ft., in 10 ft. and 15 ft. sections, and to hold tanks of 50,000 gal. and less.

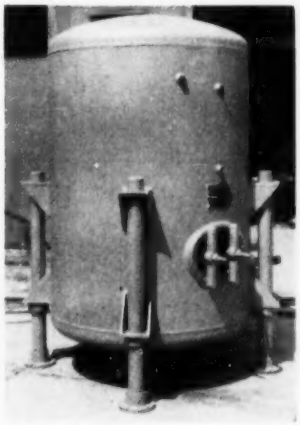
Latticed Towers—Built of laced steel channel columns and struts (bridge construction), in heights of 20 ft. and up in 5 ft. intervals and to hold wooden tanks of 300,000 gal. and less; and steel tanks of any capacity with either flat, hemispherical or ellipsoidal bottoms.



Steel Tank and Tubular Tower

Tubular Towers—Built of welded steel columns and struts, these towers are the latest design in tank support and provide a pleasing and streamlined appearance. They can be built to support tanks of any size but are usually recommended for the larger capacities.

A.S.M.E. AND SPECIFICATION STEEL TANKS



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Equipment and procedures are in accordance with current codes and conform to recognized standards for both shop and field work. Our men, fully qualified for code work, utilize the latest in manual and automatic welding equipment.

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Over 55 years of Responsibility for Efficient and Economical Yarn Carrier Service

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PAT. NOS. 2,378,901-2,381,869
OTHER PATENTS APPLIED FOR

A.P.T.'s patented "Plasti-weld" method combines laminated tube with plastic and metal in any desired combination to form a homogeneous welded unit, resulting in truly MODERN synthetic bobbins having tremendous advantages.

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PRODUCTS—Wood tanks for dyeing, bleaching, boiling carbonizing, cleaning, agitating or mixing. For storage of acid, chemical, hot and cold water.

MATERIALS—We use only the best grades of Virginia White Cedar, Gulf Red Cypress, California Redwood and Long Leaf Yellow Pine of which we carry large stocks.

We have been manufacturing wood tanks for over 80 years; our plant is equipped with modern machinery and our workmen are expert mechanics, assuring our customers of service and satisfaction.

RECTANGULAR TANKS—Made in all sizes for hand or machine dyeing, finishing, or bleaching. Rectangular tanks are bolted together with iron, brass, bronze, stainless steel, monel metal or other acid-resisting rods.

WE FURNISH TANKS—Lined with Stainless Steel, Monel Metal, Copper or lead, if desired.

ROUND TANKS—We build round tanks in capacities from 10 gallons, used for mixing up to and including tanks of 200,000 gallons for storage. Round tanks are generally used for color mixing, soap tanks, size mixing, boiling and bleaching kiers, hot and cold water storage. We equip mixing tanks with agitators when desired.

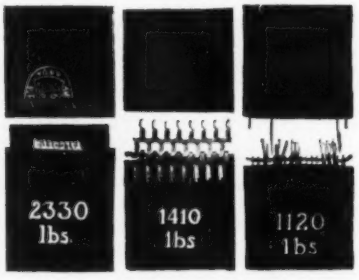
WATER SUPPLY AND SPRINKLER TANKS—Made of Virginia White Cedar, Gulf Red Cypress and California Redwood, in accordance with the requirements of the Factory Mutual or Stock Fire Insurance Companies. Steel towers or supports furnished, repairs to existing supports when desired.

Quotations with or without erection.

TANKS ARE BUILT TO ORDER—We carry no finished tanks in stock; all are made to meet customers requirements. Quotations will be promptly furnished on receipt of specifications.

AMOS H. HALL & SONS
ESTABLISHED 1868
Office and Factory
Clarkson Ave., East of Front **Philadelphia 20, Pa.**
Member National Wood Tank Institute.

You Be The Judge of Your SAVINGS with TALCOTT *Belt Fasteners*



At our expense convince yourself with this free test: On any individual belt, make a joint with Talcott Fasteners. Work it hard—then figure your savings through longer belt life without breakdowns, due to our fasteners' close pliable joint that sets records for break-resistance. Finally, multiply proved savings on this test by your total number of belts in use—and you'll have good reason to send us your order for a complete Talcott Fastener installation. Fair enough?

SEND FOR FREE SAMPLES

Without obligation, write for free samples of Talcott Fasteners for testing. State kind of belting (leather, rubber or transmission), width, thickness or number of plies, diameter of smallest pulley. Ask about Talcott Fasteners for patching, too.

W. O. & M. W. TALCOTT, Inc. Providence, R. I.

. . . the new . . .

JOHNSON Rotary Pressure JOINTS

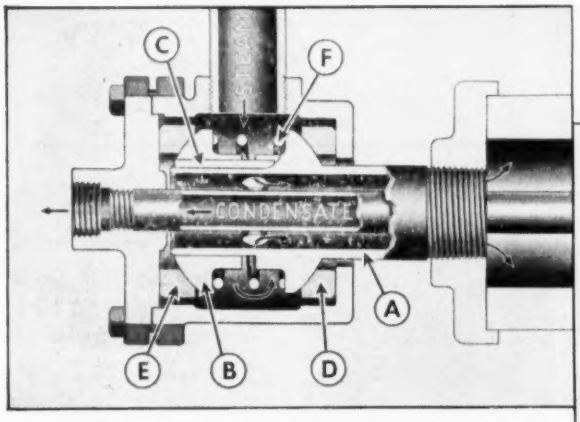
. . . to put steam or fluids into rotating machine parts . . .

For years the Johnson Joint has been the most efficient, economical way to put heating or cooling agents into rotating rolls and cylinders. Adopted widely in the rubber, paper and textile industries, it is finding more and more applications all the time throughout industry.

Now Johnson Joints are better than ever. The new design is smaller, lighter weight and easier to handle. They cost less. Their wearing parts—the carbon graphite seal rings—have been redesigned for even longer life.

As always, they offer the basic advantages of being completely packless, self-lubricating and self-adjusting to varying pressures. Their simplicity of design makes them easy to service or repair right in the field. It has always been true that Johnson Joints quickly pay the cost of switching over, but never more so than right now. If you haven't fully investigated Johnson Joints don't fail to get the facts.

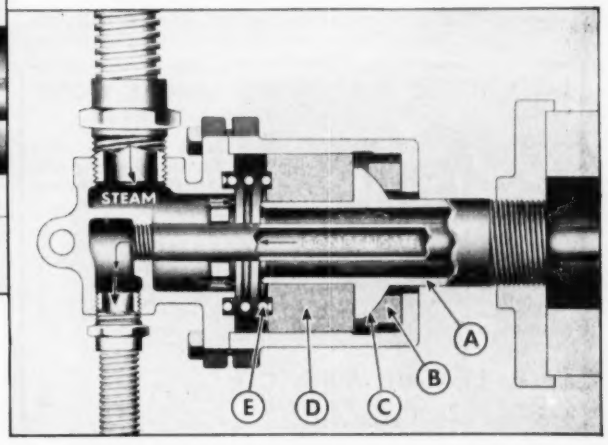
Available for all operating conditions—either through flow or syphon pipe service. Large range of sizes, covers wide range of pressures. *Write today for new Bulletins.*



NEW TYPE J

The Type J is basically the same Johnson Joint which has written an unequalled service record, and which has been adopted by so many machinery manufacturers. Besides reducing costly, hard-to-handle bulk, the new Type J brings many other refinements. The inlet is now in the side of the body, which makes easier both the piping hook-up and the task of properly centering the joint. The head design has been simplified to permit condensate outlet connection in any direction. There is also provision for a special assembly plate, between head and body, to facilitate removal of modern mechanical syphon pipes.

Cross-section view shows how nipple (A) is connected to roll or drum. Collar (B) is keyed at (C) to rotate with nipple, but fits loosely so pressure can fill entire housing. Seal ring (D) and bearing ring (E) are of special carbon graphite. Spring (F) is for initial seating only; in operation pressure is sealing force. Note self-aligning characteristics — the space around rings and nipple to provide for lateral movement of rotating assembly, and the spherical seating for angular movement.



NEW SERIES 2000 TYPE S

The Type S was big news when it was first introduced — as the self-supporting version of a device that was already the best known, most widely used of its kind. Now the new Series 2000 Type S is even better, offering size savings, weight savings, cost savings and even longer life.

Cross-section view shows how nipple (A) is connected to roll. Carbon-graphite seal ring (B) rotates against convex surface of collar (C). Joint assembly is supported by guide (D), which is also of long-lived, self-lubricating carbon graphite. Spring (E) is for initial seating only; in operation joint is pressure sealed.

The Johnson Corporation

814 Wood St. Three Rivers, Mich.

For more information, write direct or use Reader Service post card.

Step up **PRODUCTION** Reach highest places **SAFELY**

with a **BALLYMORE** Safety-Step **LADDER**

Production goes up . . . accidents decrease . . . when a Ballymore Safety Ladder joins the working force. The hard-to-get-at places on looms, spinning frames and creel racks are within safe reach. Workers can do high-up jobs with ground floor safety, without fear of falling.

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These exclusive design loom flags are saving thousands of hours in production loss for many mills. Let us demonstrate how you can cut your weave room costs with LEAGUE LOOM FLAGS. Write us today.

G. F. LEAGUE MFG. CO.
The Best in Textile Wood Parts
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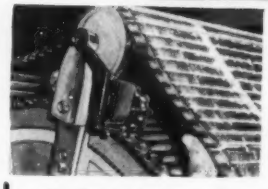
AGENT FOR CRONLAND LOOM BEAMS

20 DAY FREE TRIAL



The **M&J** lubricator has been tested and approved by more than 90 of the largest textile companies in the United States. Write or wire today for full details.

M&J CORD FLAT CHAIN LUBRICATOR

• ADVANTAGES •

1. Lubricating while card is being ground. Requires very little attention.
2. Increases life of expensive flat chains. 40% increase already proven and still running.
3. Reduces replacements of expensive case hardened worm gears. Some grinders report 75% saving!
4. Insures accurate settings by eliminating "bucked flats."

W.G. JARRELL MACHINE CO.
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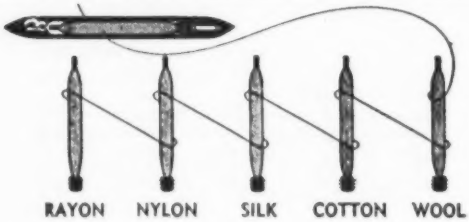

USE SNOWISS SHUTTLE FUR!

For all types of yarns, for best loom efficiency and less seconds. New Zealand brown or gray o'possum—muskrat—sheepskin—in any form.

Strips of any width or length, or in whole skins, sheared or unsheared. Prompt Delivery.

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The STEWART IRON WORKS CO., Inc.

2010 STEWART BLOCK (ESTABLISHED 1886) CINCINNATI 1, OHIO

MANUFACTURERS OF IRON AND WIRE FENCE, GRILLES, RAILING, WINDOW GUARDS, GENERAL IRON AND WIRE WORK

PRODUCTS—Plain and Ornamental Iron Fence and Gates; Chain Link Wire Fence and Gates; Iron Railings; Grilles; Wire Mesh Partitions; Folding and Sliding Gates; Window Guards, Wire Roof Signs; Steel Shutters; Steel Doors; Sidewalk Gratings; Steel Ladders, etc.

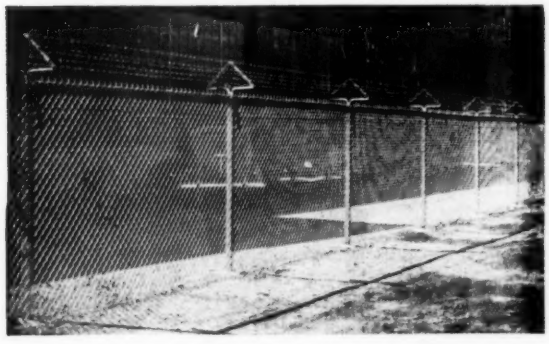
FACILITIES—Backed by more than a half century of experience, this company has acquired a fund of knowledge possible only through a lifetime of association with the fence building industry. Here 350,000 square feet of floor space is devoted exclusively to the manufacture of Stewart Products. Production schedules are rigidly adhered to, assuring "on time" shipments, and manufacturing cost closely watched to keep Stewart prices commensurate.

Stewart IRON and WIRE FENCES

"Experts in Metal Fabrications since 1886"

All-Beam construction, Oval-Back I-Beam Line Post with one-piece integral extension arm, an unbreakable unit, are but two of the many outstanding superiorities exclusive with Stewart. Stewart produces the heaviest and strongest Chain Link Wire Fence on the market.

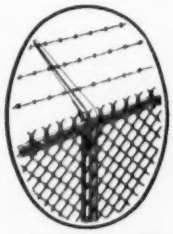
Designing and Drafting Service is available, to aid in the adaptation of Stewart Products to meet industrial needs, or to create specific designs to meet individual requirements. There is no charge for this service and it places you under no obligation. Literature is available on all Stewart Products. Catalogs listed at bottom of page will be sent on request. Stewart maintains Sales and Erection offices in all principal cities.



The illustration above shows a Typical Stewart 5TH Industrial Installation.

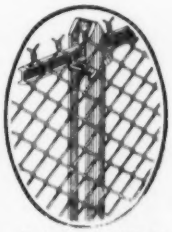
Demonstrating the adaptability of Iron Fence for front industrial property lines.

Catalog No. 84, Iron Fence, Iron Entrance Gates, Gateway Arches, etc.
Catalog No. R-49, Railings, Lanterns, Interior Gates, etc.
Catalog No. 85, Chain Link Wire Fence and Gates
Catalog No. I-50, Industrial Fence Specification Manual
Folder No. WG-50—Window Guards
Folder No. WP-50—Wire Mesh Partitions
Folder No. FG-50—Folding Gates
When requesting literature, please order by number.

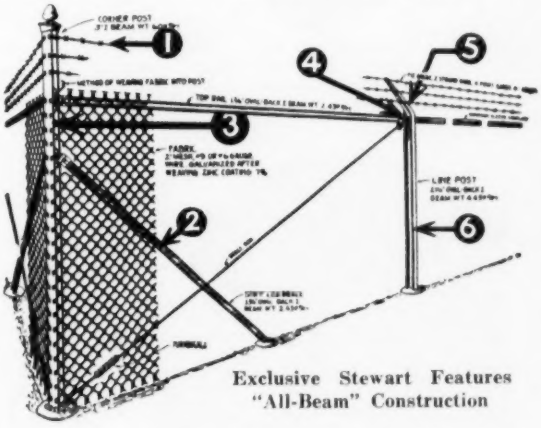


Detail of "Style 3TH." Also furnished in Medium Weight Construction known as "Style 3TM"

Detail of "Style 5TH Extension Arm." Also furnished in Medium Weight Construction "Style 5TM"



Detail of "Style 0TH." Also furnished in Medium Weight Construction known as "Style 0TM"



Exclusive Stewart Features "All-Beam" Construction

(1) 12 gauge double galvanized copper bearing steel barbed wire with barbs spaced 4 in. apart. Securely fastened to flange of beam post.

(2) Stiff leg bracing as used for fences 6 ft. high or higher. Set into concrete footing with an auxiliary ⅝-in. round truss rod.

(3) Fabric spirals through slots in terminal posts. Such construction eliminates need for bolts, bands, tension bars.

(4) Beam top rail passes through line posts and forms brace the full length of fence line. Adjustable expansion sleeves used to connect sections of top rail.

(5) Beam line posts with integral extension arm. Obviously superior to posts requiring separate pressed steel extension arms.

(6) Oval-Back I-Beam section takes its shape from rolls owned by this company. Designed primarily for fence use; strongest at points of strain.

STEEL FABRICATORS TO THE WORLD SINCE THE MONITOR FOUGHT THE MERRIMAC

Communist machine-gun fire dropped him in combat. But whole blood kept him alive, saw him through the hospital. He thanks you for his life.

She'd been exposed to polio. A new serum, *Gamma Globulin*, made from blood, helped ward off the dread disease. She thanks you for her life.

A tornado whipped suddenly across her home town. She was badly injured by falling debris. But a quick operation, several transfusions pulled her through. She thanks you for her life.

Three grateful people say: "We're HERE... because you were THERE!"

Each one of these people is alive today because someone gave blood.

If you've given blood before, you know how easy it is—how quick and painless. And you know what a wonderful feeling it is when you realize that what you've done may give another person his life.

Now you are asked to give blood . . . again and again. And you can do it safely every 3 months.

Because America's need for blood has increased enormously—for our armed forces, for accident and disaster victims at home, for new disease-fighting serums.

Many a life hangs in the balance! Will you help? Call your Red Cross, Armed Forces or Community Blood Donor Center today!

BUSINESS EXECUTIVES CHECK THESE QUESTIONS

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ◯ HAVE YOU GIVEN YOUR EMPLOYEES TIME OFF TO MAKE BLOOD DONATIONS?
- ◯ HAS YOUR MANAGEMENT ENDORSED THE LOCAL BLOOD DONOR PROGRAM?
- ◯ HAS YOUR COMPANY GIVEN ANY RECOGNITION TO DONORS?
- ◯ HAVE YOU INFORMED EMPLOYEES OF YOUR COMPANY'S PLAN OF CO-OPERATION?
- ◯ DO YOU HAVE A BLOOD DONOR HONOR ROLL IN YOUR COMPANY?
- ◯ WAS THIS INFORMATION GIVEN THROUGH PLANT BULLETIN OR HOUSE MAGAZINE?
- ◯ HAVE YOU ARRANGED TO HAVE A BLOODMOBILE MAKE REGULAR VISITS?
- ◯ HAVE YOU CONDUCTED A DONOR PLEDGE CAMPAIGN IN YOUR COMPANY?
- ◯ HAVE YOU SET UP A LIST OF VOLUNTEERS SO THAT EFFICIENT PLANS CAN BE MADE FOR SCHEDULING DONORS?

Remember, as long as a **single** pint of blood may mean the difference between life and death for **any** American . . the need for blood is **urgent!**

NATIONAL BLOOD PROGRAM

GIVE BLOOD

...give it again and again

CHEMICALS and DYESTUFFS

DU PONT MAKES THE FOR EVERY DYEING

Textile Finishing Agents

"AVITEX"* and "AVITONE"* Finishing Agents

The "AVITEX" and "AVITONE" products are designed especially for softening and finishing textiles. They impart an exceptionally pleasing hand to fabrics to which they are applied. The finished fabrics do not become rancid or discolored upon long storage at high temperatures.

The "AVITEX" types are based upon alcohol sulfates. "AVITONE" types are hydrocarbon sulfonates.

A Type for Every Need

"AVITEX"* AD—as a leveling and softening agent in the dye bath.

"AVITEX"* C—for cotton finishing, alone or with starches.

"AVITEX"* R—for softening rayon and to give a soft and effective anti-static finish to acetate, nylon, and the new synthetic fibers.

"AVITEX"* SF—for a soft, full finish on rayons and cottons.

"AVITEX"* W—for heavily calendered waxy finishes on cotton, and for rayon lining fabrics.

"AVITONE"* A—reproduces, closely, the hand obtained from natural fats. May be used alone or with starches and resins.

"AVITONE"* AL—similar to "Avitone" A, but provides additional lubrication and better sewability.

"ZESET"* S—resin finish imparts durable crease resistance, dimensional stability, and hydrophobic characteristics to cellulose fibers, with soft hand and low chlorine retention.

"METHACROL" and "PANALON" Finishing Agents

"METHACROL" NH—exhaust type resin dispersion to impart durable snag-resistant properties to hose.

"METHACROL" FNH—exhaust type resin dispersion for increased body on nylon hosiery.

"METHACROL" EL—resin dispersion for increased body and firmness on nylon hose.

"PANALON"* FF—non-exhaust type resin dispersion for increased body on all types of fibers.

Scouring, Penetrating, Wetting and Emulsifying Agents

"ALKANOL"* B—alkylnaphthalene sodium sulfonate wetting and dispersing agent.

"ALKANOL"* HGN—wetting agent with antiseptic properties, particularly useful for conditioning yarn.

"ALKANOL"* S—sodium tetrahydronaphthalene sulfonate, a good dispersing agent.

"ALKANOL"* WXN—high-efficiency wetting agent, very stable to strong acids and alkalies, as well as to hard water.

"MERPOL"* B and **C**—efficient scouring and wetting agents, combining both the properties of solvents and synthetic detergents.

"MERPOL"* F—wetting agent and penetrant for heavy rawstock and package dyeing.

"NEOMERPIN" N, "PETROWET" R and WN wetting and penetrating agents, are effective in acid solutions.

PRODUCT BCO— cetyl betain is a highly efficient wetting agent, detergent, and dyeing assistant.

AND

"DUPONOL"*—Alcohol Sulphates, a complete line of excellent detergents and emulsifying, dispersing, wetting, scouring and penetrating agents.

DU PONT

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. DU PONT DE NEMOURS & CO. (INC.)
Organic Chemicals Department
Dyes and Chemicals Division
Wilmington, Delaware

RIGHT PRODUCT AND FINISHING JOB

Solvents

"TETRALIN"* and **DECALIN*** hydrogenated solvents for oils and waxes. They are highly useful in conjunction with "Duponol" to aid penetration and detergency.

Water Repellents

"ARIDEX"* renewable water repellents give excellent water repellency and a range of finishes.

"ZELAN"* durable water repellent gives excellent initial water repellency, and it retains this repellency through numerous laundering and dry cleaning operations.

Anti-Static Agents

"ZELEC" DP and "ZELEC" DX durable anti-static agents effectively reduce static electricity in synthetic fibers and fabrics, and remain effective through repeated launderings with soap.

"ZELEC" NE and "ZELEC" NK anti-static agents effectively reduce static electricity in processing synthetic fibers and fabrics. They are easily removed by laundering and have no effect on subsequent finishing or dyeing operations.

Other Specialties

Mildew-proofing Agents

"SHIRLAN"* non-toxic mildew inhibitors, based on salicylanilide, are highly satisfactory for the preservation of textile materials.

Oxidizing Agents

"SITOL"* Flakes sodium nitrobenzene meta-sulfonic acid is a protective oxidizing agent used in discharge printing.

"ONDAL" A is an oxidizing agent valuable as a vat color developer.

Stripping and Retarding Agent

DU PONT RETARDER LAN and **LV** are very effective for this purpose.

Dyes

"ACETAMINE"* Dyes: Azo dyes specifically developed for acetate and especially suited to coloring nylon, "Orlon" acrylic fiber and "Dacron" polyester fiber.

"CAPRACYL"* Dyes: Essentially neutral-dyeing acid colors, premetalized, which produce the highest possible degree of light fastness on nylon. Also particularly suited to dyeing wool in wool/cellulosic fiber blends.

"CELANTHRENE"* Dyes: Anthraquinone dyes especially designed for coloring acetate, nylon, "Orlon" acrylic fiber and "Dacron" polyester fiber.

"CHROMACYL"* Dyes: Dyes that contain chromium in the dye molecule characterized by ease of application and good fastness on wool and nylon.

"DIAGEN"* Dyes: Stabilized azoic colors tinctorially strong with good fastness in full shades, for printing cotton and rayon.

"LATYL"* Dyes: Finely dispersed dyes, specifically developed for exceptional light and wet fastness on "Dacron" polyester fiber and high light and fume fastness in pastels on acetate.

"LEUCOGENE"* Dyes: Soluble vat dyes with very good fastness, for printing and dyeing cotton and rayon.

"LEUCOSOL"* Dyes: Vat colors, specifically prepared for excellent application and fastness properties in textile printing.

"MONASTRAL"* Pigments: Insoluble pigments, producing extremely bright shades of blue and green with excellent fastness and high tinctorial strength.

"PONSOL"* Dyes: Anthraquinone vat dyes, with excellent fastness for dyeing and printing cotton, silk, and rayon.

"PONTACHROME"* Dyes: Chrome dyes, particularly adapted to wool and nylon fabrics such as men's suiting and over-coating.

"PONTACYL"* Dyes: Acid dyes, producing bright shades on wool, nylon, silk, and "Orlon" acrylic fiber.

"PONTAMINE"* Diazo Dyes: Developed direct dyes with good wash fastness, extensively used on fabrics to be printed with discharge patterns.

"PONTAMINE"* Dyes: Direct dyes, extensively used for dyeing all classes of fiber except acetate.

"PONTAMINE"* Whites: Fluorescent whitening agents, producing brilliant optical bleaches with exceptional wet fastness when applied to cotton and rayon.

"RORACYL"* Dyes: Soluble dyes with good affinity and fastness properties on "Orlon" acrylic fiber.

"SULFANTHRENE"* Dyes: Thioindigoid vat dyes with good fastness properties, for dyeing and printing cotton, rayon and silk.

"SULFOGENE"* Dyes: Sulfur colors, applied from a sodium sulfide solution, used extensively on cotton work-clothing fabrics.

*REG. U. S. PAT. OFF.

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Philadelphia, Pa. East Providence, R. I. Los Angeles, Calif.

MONSANTO CHEMICAL COMPANY
Textile Chemicals Department

FINISHING

Material	Description	Application
RESLOOM*	Melamine resin; fine white crystalline powder, freely soluble in water; hygroscopic—contact with moisture must be avoided. Also available in liquid form.	FOR WOOLENS: Provides unusual shrinkage control and washability—builds body, drape and tailorability. FOR RAYON and SYNTHETICS: Imparts lively hand, wrinkle resistance and washability to rayon and viscose suitings. FOR COTTONS: Provides durable resistance to dress goods, suitings and other constructions. Used for glazed and embossed finishes.
MERLON*	Thermoplastic resin dispersions and solutions. (Ask for specific data on the various Merlon finishes.)	FOR WOOLENS: Gives added body to woolen suitings. FOR RAYON and SYNTHETICS: Provides a firm, durable finish for dress goods. FOR COTTONS: Imparts a firm, durable hand to dress goods, marquisettes and sheetings; improves wear-resistance of tickings.
SYTON*	Milky, white liquid-stable dispersion of 15% colloidal silica particles in water. Odorless, non-toxic.	FOR RAYON and SYNTHETICS: Imparts a worsted-like hand to viscose-acetate suitings and rayon-wool blends; provides slippage control on filament-type fabrics. Also used to develop scroop, to control luster, and for a wide variety of special effects in combination with Merlon or Resloom.
CATALYST AC*	Light yellow liquid. Solids: 35% N.V.M., pH 7.7 (± 0.2). Compatible in resin baths with most cationic, anionic and non-ionic softeners and penetrants.	FOR RAYON and SYNTHETICS: As a catalyst in urea and melamine finishing assures uniformity of resin application and retention, minimizes formation of objectionable odors, improves fabric performance.

SPINNING

Material	Description	Application
SYTON*	Milky, white liquid-stable dispersion of 15% colloidal silica particles in water. Odorless, non-toxic.	FOR WOOLENS & WORSTEDS: Increases yarn strength from 10-30%; provides better carding, more uniform roping or roving, fewer ends down, spinning closer to the limit spin. FOR RAYON and SYNTHETIC BLENDS: Increases yarn strength of wool-rayon blends spun on the woolen system—reduces ends down, makes possible spinning closer to the limit spin.

Your headquarters for textile chemicals

SIZING

Material	Description	Application
STYMER* LF	Vinyl resin; free-flowing, white granular material made soluble with ammonium hydroxide.	FOR LOOM-FINISHED ACETATES: A durable size for solution-dyed yarns. Makes it possible to weave crisp, marketable fabrics (such as taffetas) that do not water-spot or become raggy after dry-cleaning.
STYMER* R	Vinyl resin; white granular material, free-flowing and readily soluble in water.	FOR NEWEST SYNTHETIC FIBERS: Developed specifically for sizing filament yarns of the acrylic and polyester types.
STYMER* S	Styrene resin; fine, free-flowing crystalline powder; freely soluble in water; pH of 5% solution 7.5-8.5.	FOR RAYONS and SYNTHETICS: A tough, uniform, flexible size for filament acetate and viscose. Provides clean and efficient slashing—no can covers necessary, won't clog pipes or valves; provides good weaving—clean fabrics, low seconds; provides easy size removal.

CONTAINERS

Catalyst AC	55-gal. drums, 5-gal. non-returnable cans.
Merlon BR, BRS	55-gal. drums, 5-gal. non-returnable cans.
Merlon KR Series	55-gal. drums, 5-gal. cans, transport tanks.
Merlon S, SP	55-gal. drums, 5-gal. cans.
Resloom HP, HPS	300-lb. non-returnable drums, 5-gal. non-returnable cans.
Resloom M-75	55-gal. drums, 5-gal. drums, 5-gal. non-returnable cans.
Stymer LF	125-lb. fiber drums.
Stymer R	125-lb. fiber drums.
Stymer S	50-lb. paper bags, 250-lb. drums.
Syton	55-gal. drums, 5-gal. non-returnable cans.

For further information on any of these chemicals for the textile industry, contact your nearest Monsanto sales office, or:

MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass.

MONSANTO
CHEMICALS—PLASTICS

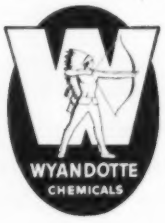
*Reg. U.S. Pat. Off.

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Wyandotte Chemicals Corporation

Offices in Principal Cities

SODA ASH • BICARBONATE OF SODA
CHLORINE • HYDROGEN



CAUSTIC SODA • CALCIUM CHLORIDE
DRY ICE • SYNTHETIC DETERGENTS

Other Inorganic and Organic Chemicals

What it means to you to deal with Wyandotte—

You get quality chemicals—that's understood. But more than that, you get the benefits of four important service groups.

Our Technical Service Department works closely with you in the application and handling of our products—saving you time, effecting production economies.

Our Market-Research Department anticipates the product requirements of your industry . . . enabling Wyandotte to better serve you with quality chemicals when you want them.

Our Research and Development Division develops new products and improved production methods . . . bringing you new, quality chemicals at low cost.

Our Traffic Department helps you save money on freight charges by efficient, low-cost routing.

That's the Wyandotte way. In our 63 years of experience, it's proven useful to a lot of companies.

. . . . .

Wyandotte Chemicals Corporation, Wyandotte, Michigan

CAUSTIC SODA

Wyandotte Caustic Soda is available as a liquid in 50% and 74% concentrations and in five anhydrous forms: solid, standard flake, ¼" flake, crystal, and powdered. Purer than most reagent grade caustics, mercury cell caustic (Wyandotte's rayon grade) is virtually free from sodium chloride, sodium chlorate, iron and all other impurities.

Wyandotte's Caustic for the textile industry is naturally pure . . . produced by the mercury cell process, it does not depend upon the efficiency of a purification system. You can depend on Wyandotte's Mercury Cell Caustic to be uniform, physically and chemically.

Shipping Information. *Freight Classification:* Caustic Soda.

All grades of Wyandotte's liquid caustic are shipped in specially lined tank cars arriving ready for use without further processing. All dry forms are shipped in drums, by rail or truck. Distributor stocks are maintained in 69 principal cities.

Textile Applications — Major Fields. Kier boiling, scouring, bleaching, mercerizing, dyeing and finishing of cottons . . . steeping cellulose in rayon processes . . . and water softener, cleaner, saponifying agent, bleaching agent and pH adjustment of wool, cotton and the synthetics.

SODA ASH

One of the leading producers of soda ash, Wyandotte Chemicals offers the product in five grades. Every grade of Wyandotte Soda Ash tests 58% sodium oxide—or better.

Shipping Information. *Freight Classification:* Soda Ash.

Wyandotte Soda Ash may be obtained in either bag or bulk, hopper car or boxcar, truck or barge. Distributor stocks are maintained in 68 principal cities.

Textile Applications—Major Fields. Kier boiling, scouring, water softening agent, emulsifier, casein solvent and alkalinity control of wool, cotton and the synthetics . . . also used as an ingredient in rug cleaners.

BICARBONATE OF SODA

Wyandotte Chemicals produces bicarbonate of soda meeting the U.S.P. XIV standards . . . and makes it available in several screen sizes. Thus, Wyandotte furnishes, in carload quantities, the same quality product available on drugstore shelves.

Shipping Information. *Freight Classification:* Bicarbonate of Soda.

Shipped in bags or bulk . . . in boxcars, hopper cars or truck. Distributor stocks are maintained in over 60 principal cities.

Textile Applications—Major Fields. Buffering agent (pH control), scouring agent and dye bath assistant for wool, cotton, silk and the synthetics . . . also used for water softening.

CHLORINE

Long experience in the manufacture of chlorine permits Wyandotte to offer expert technical service to all consumers in handling and utilizing this product most advantageously. Wyandotte's Traffic Department routes shipments efficiently and economically. Thorough examination of every tank car prior to loading insures the purity of the product and proper functioning of the outlets and safety valve. All angle valves are removed, tested and reconditioned before every loading.

Wyandotte liquid chlorine contains more than 99.7% chlorine by weight.

Shipping Information. *Freight Classification:* Chlorine.

Available in 16, 30, and 55 ton tank cars—all territories. Wyandotte's Chlorine is shipped as a liquid in single unit tank cars of the sizes noted. General design and fittings are similar. Due to the safe design, rigid inspection and expert maintenance of all Wyandotte tank car equipment, the use of liquid chlorine from single-unit cars is very satisfactory where the volume consumed justifies buying in this type of equipment.

Textile Applications—Major Fields. Shrinkproofing, bleaching of cotton and wool, intermediate in dyeing . . . water treatment.

PLURONICS* (Pluronic L44, Pluronic L62, Pluronic L64 and Pluronic F68—Nonionic Surfactants)

Wyandotte's Pluronics are a series of unique surface active agents of unusually high molecular weight. Their ether type structure, which results in excellent stability to acids, alkalies and electrolytes, is a distinguishing feature. Pluronic F68 possesses the further advantage for many applications of being in the form of free-flowing white flakes, 100% active.

Suggested for use in textile applications where wetting, penetrating ability, excellent detergency and complete rinsability are desired, the Pluronics, alone or properly compounded, are recommended for wool scouring, warp sizing, carbonizing, desizing, boiling off, dye leveling, soaping and finishing. Due to their unique structure, they serve in the intermediate field between normal surfactants and natural organic colloids . . . exhibiting unusual effects with differing types of colloidal materials.

Shipping Information. *Freight Classification:*
F68—Washing Compound NOIBN-Dry.
L44, L62, L64—Washing Compound Liquid.

Textile Applications—Major Fields. Scouring, sizing, carbonizing, desizing and dye leveling of wool, cotton, silk and synthetics.
**Reg. U. S. Pat. Off.*

KREELON* (Sodium Alkylarylsulfonate)

Throughout the textile industry, where economical surface active agents, having efficient detergency, wetting and rinsing properties in hard and soft water, are required, Kreelon is highly recommended. Its properties permit its use in either alkaline or acid media . . . in kier boiling, Kreelon assists in the penetration of the caustic liquor and the emulsification and suspension of oils, waxes, proteins and pectoses natural to the fibers. It is also desirable in dye leveling and in bleaching operations.

Kreelon is a surface active agent designed for use either alone or in combination with alkalies or other additives. Synthetic detergent and wetting agent of the alkylarylsulfonate type, Kreelon is available in low and high active agent forms with 40% and 85% active agents respectively; color, white to light cream. Retains wetting, emulsifying and detergent properties in acid, alkaline, or neutral solutions . . . and in hard waters. Physical forms—flakes or powder. pH of 1% solution at 25°C., 7.0-8.5.

Shipping Information. *Freight Classification:*
Washing Compound NOIBN-Dry.
Kreelon is packed in Leverpak drums or bags, shipped by rail or truck.

Textile Applications—Major Fields. Scouring, kier boiling, carbonizing, fulling, degumming of silk filaments, bleaching aid, package dyeing, dye bath assistant for the level dyeing of cotton, wool, silk, linen, and synthetics. Also used in rug and upholstery shampoos . . . as a spotting agent in dry cleaning. **Reg. U. S. Pat. Off.*

CARBOSE* (Sodium CMC)

The Carboses are a technical grade, low-viscosity type of sodium carboxymethylcellulose, having particular application in the textile industry. They are finely ground, light cream-colored powders. The low viscosity and fine particle size insure rapid and maximum solubility. Minimum active agent (ethanol method), 65%; maximum moisture content, 8%.

Carbose I

Finding increased use as a warp sizing agent, Carbose I overcomes many of the disadvantages of other film forming materials. Among the advantages offered are:

1. Availability . . . price and availability of Carbose I do not vary as widely as those of starches and glues with changing economic conditions.
2. Storage stability . . . Carbose I may be stored indefinitely as a solid and for several days in solution at room temperature.
3. Softer warps . . . Carbose I thoroughly sizes the warps without stiffening them.
4. Desizing . . . Carbose I can be removed by two or three hot water rinses (enzyme action unnecessary).
5. Cleaning equipment . . . slasher and auxiliary equipment are easily cleaned due to solution properties of Carbose I.
6. Uniformity . . . Carbose I is not subject to the variability in quality and performance of natural products.

Carbose TP

To meet the specific requirements of textile printing, Wyandotte Chemicals manufactures a special form of sodium CMC, Carbose TP . . . well suited for insoluble Azo colors; also may be used with most soluble vat colors according to generally accepted printing techniques. Has advantage of rapid solubility from fiber after dye is fixed, and general stability to most chemicals.

Shipping Information. *Freight Classification:* Chemicals NOIBN.
Carbose is packed in drums, shipped by rail and truck.

Textile Applications—Major Fields. Scouring fibers, thickening printing pastes, warp size preparations, finishing agents, vat dyeing, stabilizer for latices and resin emulsions . . . cotton, wool, silk and synthetics. **Reg. U. S. Pat. Off.*

NAXONATE* (Sodium Xylenesulfonate)

Wyandotte's Naxonate is a hydrotropic salt . . . a salt that increases the solubility of slightly soluble organic substances in water. The coupling effect of this product affects numerous organic materials, both liquid and solid, which ordinarily are insoluble or only slightly soluble in aqueous solutions . . . they quickly dissolve in solutions of Naxonate.

White to cream in color, Naxonate is 95% minimum active agent; inorganic salts (alc. insol.) 3.5% max.; water 2.5 max.; struck density (lbs./cu. ft.) 35; packed density (lbs./cu. ft.) 50; pH (of 1% solution at 25°C.) 7.5; decomposition temperature is 355°C . . . booklet available.

Shipping Information. *Freight Classification:* Chemicals NOIBN.
Naxonate is packed in Leverpak or plywood drums, shipped by rail or truck.

Textile Applications. Permits preparation of concentrated solutions of synthetic detergents . . . reduces viscosity of glues, starches, etc. . . . solubilizes organic dyestuffs . . . clarifies mixtures of oils, stearates, etc. . . . prevents separation of scouring agents.
**Reg. U. S. Pat. Off.*

PURECAL* (ppt. $CaCO_3$)

Manufactured by a unique precipitation method, Purecal (Wyandotte's precipitated calcium carbonate) is known for its whiteness, purity and uniformity throughout the chemical process industries. Unlike most precipitated carbonates, Purecal is virtually free from iron, magnesium and alkali salts, as well as abrasive materials . . . all grades of Purecal meet U.S.P. XIV standards . . . Purecal is the whitest substance known.

Shipping Information. *Freight Classification:* Calcium Carbonate.
Shipped in bag or bulk in boxcars, hopper cars and by truck.

Textile Applications. Weighting and finishing agent.
**Reg. U. S. Pat. Off.*

OTHER WYANDOTTE CHEMICALS

Other Wyandotte Chemicals used by the textile industry are: Monocol* . . . ethylene and propylene glycols (used as a humectant and a solvent for dyes and resins); Dicol* (humectant and solvent); ethylene dichloride and propylene dichloride (used as a spotting agent, scouring bath component, etc.); benzenesulfonylchloride and benzenesulfonamide (used as intermediates in the production of dyestuffs). **Reg. U.S. Pat. Off.*

POLYMERS

FOR TEXTILE FINISHES

IN WATER DISPERSION • IN WATER SOLUTION

IN SOLVENT SYSTEMS

Sizings · Binders · Thickeners · Emulsifiers
Adhesives · Coatings · Saturants

POLYVINYL ACETATE EMULSIONS

POLYCO 953-7A A 55% *anionic* polyvinyl acetate dispersion of extremely fine particle size. Deposits films of exceptional clarity and water-resistance.

USES: Water-resistant sizing for loom-finished acetate taffetas. "Durable-starch" finish for print goods, sheetings, linings, etc. Can be used in conjunction with anionic softeners.

POLYCO 117SS A 55% *nonionic* polyvinyl acetate dispersion with exceptional mechanical stability, freeze-thaw stability, solvent stability, resistance to blocking and build-up on machines.

USES: For maximum stiffening on cottons and rayons. Can be compounded with anionic or cationic softeners.

POLYCO 497 35% Vinyl Acetate Copolymer emulsion alkali-soluble. For warp-sizings and finishes on synthetic fabrics.

POLYCO 508-W 20% Ammonia salt solution of vinyl acetate copolymer for spot resistant warp-sizings for loom-finish acetates and synthetic fabrics.

POLYCO®

OTHER EMULSIONS FOR TEXTILE FINISHERS
We will be glad to assist you in selecting other types of resin emulsions to meet your specific requirements.

American Polymer Corporation

GENERAL OFFICES:

101 Foster Street • Peabody, Massachusetts

Manufacturers of **VINYL · ACRYLIC · BUTADIENE · ACRYLONITRILE STYRENE · VINYLIDENE · Polymers and Copolymers**

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BUFFALO ELECTRO-CHEMICAL COMPANY, INC.

Division of Food Machinery and Chemical Corporation
Sales Agent: Becco Sales Corporation, Station B, Buffalo 7, N. Y.
Branch Offices in Boston, Charlotte, Chicago, New York,
Philadelphia, Green Bay, Wisc., Vancouver, Wash.

BECCO chemicals are pure, accurate as to strength, uniform and stable.

Becco processes are simple, and precisely controlled . . . kind to fibers . . . the result of years of laboratory study and proved operation in the hands of manufacturers who bleach raw stock, top, yarn, woven fabric, and knit goods.

Becco representatives and Becco's technical staff are available for assistance on all bleaching problems.

HYDROGEN PEROXIDE

Strength by weight: 27.5%, 30%, 35%, 50%
Used for continuous, kier, machine, jig, tub, cold or dry-in bleaching of cotton, wool, rayon, linen, silk, straw, hair, bristles, etc.

CONTINUOUS BLEACHING

An important development in continuous J-box bleaching is the Wet J-box. The wet box supports and "lubricates" the goods, reduces friction in the curve of the J, expedites flow, reduces pulling strain, eliminates snarling and tangling. Speeds run as high as 300 yards per minute. The Wet J-box gives a preliminary wash which reduces surface deposits and improves dyeing quality.

WOOL BLEACHING

Blanket wool, women's coat and dress goods, knitting yarns, and other forms of wool are bleached with hydrogen peroxide to a bright, permanent white, or prepared for dyeing in pure, delicate and uniform pastel colors. For carpet wool in stock or yarn, hydrogen peroxide reduces the shade variations of natural wool so that dyeing gives the superb quality of uniform, true and brilliant colors to the finished product.

DYE OXIDATIONS

Hydrogen peroxide is efficient & simple to use for the oxidation of vat dyes on cotton and synthetics.

PERACETIC ACID 40%

Dye becks, jigs or similar equipment are used for peracetic acid bleaching of acetate rayon, nylon, or mixtures of these, with or without cotton or viscose rayon, to produce full white without fiber attack. Mote removal is complete when bleaching cotton mixtures.

PERSULFATES

Ammonium and potassium persulfate are used for oxidation of sulfur dyes.

SODIUM PERBORATE

Mild oxidizing agent used in dry cleaning & for dyestuff development.

BECCO TEXTILE BULLETINS

Complete, detailed bulletins on all Becco products and processes mentioned in the foregoing text are available from the main office or any of the branch offices of the company. See list at head of page.

what's **corn** doing breaking thru the sound barrier?

CORN PERFORMS VITAL FUNCTIONS . . . IN MANY UNEXPECTED PLACES

The aluminum alloy in the fuselage of a supersonic jet . . . and the steel-molybdenum in its armor . . . use a derivative of corn in their manufacture. Specialized corn starches are used in refining and extracting these metals from their ores. This is but one of the numerous examples of how basic research in corn helps American industry . . . helps you.

CORN PRODUCTS IN TEXTILES

For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins . . . recommended ingredients for many textile processes.

We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
GLOBE®
brand dextrins, gums
GLOBE®
brand starch
EAGLE®
brand corn starch

CORN PRODUCTS REFINING COMPANY, 17 Battery Place, New York 4, N. Y.

CHEMICAL USERS' GUIDE To General Chemical Products for the Textile Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$	Colorless Crystals	96% $Na_2SO_4 \cdot 10H_2O$ 42.3% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Glauber's Salt, Anhydrous Na_2SO_4	White Granules	99.9% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Sulfuric Acid H_2SO_4	Liquid	66° Be 93.19% H_2SO_4	Carboys Steel Drums Tank Trucks Tank Cars	Carbonizing wool; dyeing; desizing cotton; souring; rayon spinning bath.
Acetic Acid CH_3COOH + water	Colorless Liquid	Various	Carboys Barrels Tank Cars Drums	Dye bath; souring agent; imparting scroop to cotton and silk.
Aqua Ammonia NH_4OH + water *(Ammonia)*	Colorless Liquid	26° Be 29.4% NH_3	Carboys Steel Drums	Wool scouring; dyeing.
Hydrochloric Acid HCl + water *(Muriatic Acid)*	Liquid	18° Be (27.92%) 20° Be (31.45%) 22° Be (35.21%)	Carboys Tank Cars Tank Trucks	Souring; removing hypochlorite bleach; dyeing.
Tetrasodium Pyrophosphate, **Anhydrous** $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5)	Fibre Drums Bags	Stabilizing peroxide bleaches; water treatment and dispersing agent; detergent.
Sodium Tripolyphosphate $Na_5P_3O_{10}$ *(Tripoly)*	White Powder	90-95% $Na_5P_3O_{10}$ (Total P_2O_5—56%)	Bags	Water treatment and dispersing agent; detergent.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$	White Granules	29.0% Na_2O	Bags Fibre Drums	Kier boiling as detergent.
Sodium Sulfite, Anhydrous Na_2SO_3 *(Sulfite)*	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Rayon manufacturing
Sodium Bisulfite, Anhydrous $Na_2S_2O_5$ *(ABS) (Sodium Metabisulfite)*	White Powder	97.5% $Na_2S_2O_5$ (Equiv. 65.5% SO_2)	Bags Fibre Drums	Bleaching wool; anti-chlor after bleaching with hypochlorite; rayon manufacturing.
Oxalic Acid $C_2H_2O_4 \cdot 2H_2O$	Colorless Crystals	99.5% $C_2H_2O_4 \cdot 2H_2O$	Bags Fibre Drums	Bleaching; dyeing for mordanting wool with chrome.
Sodium Silicate $Na_2O \cdot X(SiO_2)$ + water	Viscous Liquid	38° to 52° Be Various ratios of $Na_2O:SiO_2$	Steel Drums Tank Trucks Tank Cars	Stabilizing peroxide bleaches.
Aluminum Chloride, Solution $AlCl_3$ + water	Liquid	32° Be 50% $AlCl_3 \cdot 6H_2O$	Carboys Tank Cars	Carbonizing wool.

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Disodium Phosphate; Nitre Cake; Trisodium Phosphate; Sodium Hyposulfite; Aluminum Sulfate; Lead Acetate; Mixed Acid; Epsom Salt; Chrome Alum; Ammonia Alum; Potash Alum; Ammonium Sulfate; Ferric Sulfate (Iron Copperas Nitrate); Ferric Nitrate (Iron True Nitrate).

FOR THE LABORATORY OR SPECIAL APPLICATIONS: BAKER & ADAMSON REAGENTS and FINE CHEMICALS

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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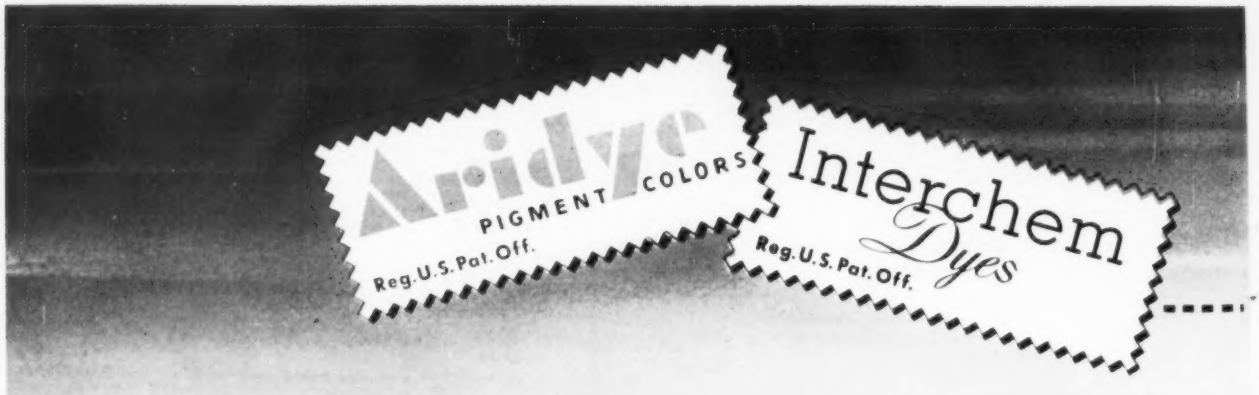
Allied Chemical



PIGMENTS—PRINTING

Aridye® Pigment Printing Colors

Aridye Pigment Printing Colors are employed extensively for fast-color printing of cotton, rayon, acetate, nylon, and other natural and synthetic fibers. They are resin-bonded pigment colors which are applied in the form of pigmented emulsions. Printing is carried out on ordinary roller printing machines or on conventional screen printing equipment. Aftertreatment usually is limited to drying and curing. These colors can be run in combination with aniline black, Arigen® Dyes (Interchemical's stabilized azoic dyes), and other classes of soluble dyes.

PIGMENTS—DYEING

Aridye® Pigment Padding Colors

Aridye Pigment Padding Colors are used for fast-color dyeing of cotton, rayon, nylon, and other natural and synthetic fabrics. These colors are water-miscible pastes containing a high concentration of pigment. They are applied in conjunction with Aridye Padding Clear by a simple padding method, after which the fabric is dried and cured.

DYES

Interchem® Acetate Dyes

Interchem Acetate Dyes are employed extensively for dyeing and printing acetate, nylon, Dacron, and other synthetics. All the dyes in this series are suitable for application on jigs or boxes. Many can also be used for application and/or discharge printing. All Interchem Acetate Dyes are highly dispersed, dye level, and have good penetration properties. Time-consuming and costly redyes and seconds are cut to a minimum.

Arilan* Dyes

Arilan Dyes are Interchemical's metalized acid dyes for wool. The dyes in this series provide brilliant shades of excellent fastness to light, washing, perspiration, sea water, carbonizing, and fulling. They are particularly suitable for dyeing a wide range of shades from pastels to deep, rich shades on loose wool or slubbing, yarns, felt, woolen, and worsted piece goods.

Arilite* Dyes

Arilite Dyes are Interchemical's fast-to-light direct dyes for dyeing cotton and rayon. They have excellent penetrating and leveling properties. They are useful for cross-dyeing rayon-acetate blends. Arilite Dyes are particularly valuable for dyeing fabrics to be treated with resin finishes for wrinkle and crease resistance. Shades produced with these dyes exhibit minimum shade change when resin finished.

Interchem® Formaldehyde Black GDW New Conc.

Interchem Formaldehyde Black GDW New Conc. is typical of the selected direct dyes produced by Interchemical's Textile Colors Division. This dye produces a full bloomy black. It has excellent dischargeability which makes it valuable for producing clean white discharge styles.

Arigen® Dyes

Arigen Dyes are Interchemical's stabilized azoic dyes. They are especially useful for printing cotton and spun rayon. Prints produced with Arigen Dyes are characterized by their brilliancy of shade, and good to excellent all-round fastness. Arigen Dyes are often employed in conjunction with Aridye Pigment Printing Colors to provide color combinations not otherwise readily or economically obtainable.

Interchem® Napthols and Bases

Interchem Napthols are offered for use in conjunction with Interchem Fast Color Bases for fast-color dyeing of cotton and other materials. Interchem Napthols are also used in conjunction with stabilized azoic bases for producing bright, fast-color prints on cotton, spun rayon, and other materials.

MILDEW PREVENTIVES

Interchem® Copper-8-Quinolinolate

Interchem Copper-8-Quinolinolate, a highly effective fungicide, is offered in the form of various dispersions, and as a powder for use on a wide range of woven and non-woven textiles and other materials to prevent mildew and rot.

Interchem® Zinc-2 Dispersions

Interchem Zinc-2 Dispersions contain a balanced ratio of the zinc salts of 2-mercaptobenzothiazole and dimethyldithiocarbamic acid. They are offered in the form of various dispersions for use in mildewproofing woven and non-woven textiles and other materials. Interchem Zinc-2 Dispersions do not alter the shade of textiles to which they are applied.

*Trade Mark

....A World-Wide Reputation

Affiliates . . . Representatives . . . Distributors

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Manuel Ferreira Soc. de Resp. Ltda.
Belgrano 1250
Buenos Aires, Argentina

AUSTRALIA
John Beith & Co. Pty. Ltd.
Box 2035, G.P.O.
Sydney, Australia

AUSTRIA
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Borsegasse 18, Vienna, Austria

BELGIUM
Etablissements Joseph Vandemeulebroucke, S.A.
9 Rue de la Madeleine
Courtrai, Belgium

BRAZIL
Landmann Filhos y Cia. Ltda.
Caixa Postal 4124
Sao Paulo, Brazil

BRAZIL—Interchem Acetate Dyes
Estabelecimento Nacional Industria de Anilinas S.A. "ENIA"
Caixa Postal 1584
Sao Paulo, Brazil

CANADA—Aridye Pigment Colors
Ault & Wiborg Co. of Canada Ltd.
1210 Benoit Street
Montreal, P.Q.

CANADA—Aridye Pigment Colors
Ault & Wiborg Co. of Canada Ltd.
82-90 Peter Street
Toronto, Ontario

CANADA—Interchem Dyes
Marwin Dyestuffs of Canada Ltd.
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CUBA
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CZECHOSLOVAKIA
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London E.C. 3, England

DENMARK
Johan Foge Jensen
32 Dansvej
Copenhagen V, Denmark

EGYPT
Commerciale Minerva S.R.L.
Piazza della Repubblica 18
Milano, Italy

S. Pinto & Co. Succrs.
(Sub-Distributor)
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Alexandria, Egypt

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(Southern) 1st Section
Taipeh, Formosa

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Piazza della Repubblica 18
Milano, Italy

GREECE
Commerciale Minerva S.R.L.
Piazza della Repubblica 18
Milano, Italy

HOLLAND
Etablissements Joseph Vandemeulebroucke, S.A.
9 Rue de la Madeleine
Courtrai, Belgium

HONG KONG
Ault & Wiborg Co. (Far East)
P. O. Box 294
Central, Hong Kong

INDIA
Indokem Limited
143 Esplanade Road, Fort
Bombay, India

IRELAND
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35/43 Ravenhill Road
Belfast, Ireland

ISRAEL
Commerciale Minerva S.R.L.
Piazza della Repubblica 18
Milano, Italy

ITALY
Commerciale Minerva S.R.L.
Piazza della Repubblica 18
Milano, Italy

JAPAN
Ault & Wiborg (Far East)
Ginni Building
No. 3 Ginza 2-Chome Chuo-ku
Tokyo, Japan

Ault & Wiborg (Far East)
51, 2-Chome Junkeimachi-Dori
Minami-ku, Osaka, Japan

LEBANON
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Piazza della Repubblica 18
Milano, Italy

MEXICO—Aridye Pigment Colors
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Esq. Municipio Libre y Tripoli
Colonia Portales
Mexico, D.F., Mexico

MEXICO—Interchem Dyes
Mexican Industries, S.A.
Balderas 130-B, Mexico, D.F., Mexico

NORTHERN RHODESIA
John Beith (SA) Pty. Ltd.
P. O. Box 632, Durban, South Africa

NORWAY
Dr. Otto Falkenberg A/S
Lovenskioldsgt. 1, Oslo, Norway

PERU
Cerva, Larrain y Cia. Ltda.
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Textile Color Division

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BETTER TEXTILES THROUGH THE BETTER CHEMISTRY OF THE Versenes®

What They Are

The *Versenes* are the most powerful Chelating (complexing) Agents known. They are extremely stable at elevated temperatures and throughout the pH range. Made only by the Bersworth Chemical Company under processes originated, developed and patented by F. C. Bersworth. Quality standards of manufacture are so high that uniform complexing power is guaranteed for *either* sample or carload lots.

What They Do

By giving you exacting chemical control over metallic ion contaminants and keeping them in soluble complex form, the Versenes are invaluable aids in these textile processes: *Scouring, Kier Boiling, Mercerizing, Bleaching, Dyeing, Finishing and Printing.*

VERSENE* (REGULAR) This powerful organic Complexing Agent sequesters and inactivates all common metallic ions including Hard Water Salts. Available in solution or as a dry, white powder, it is extremely stable, versatile, economical and efficient. The solution is pale straw-colored. Specific gravity is approximately 1.2. In 1% solution, the pH is 11.75.

VERSENE FE-3 SPECIFIC* is for chelating ferric ions throughout the entire pH range. It is the most powerful iron complexing agent known, becoming more effective as the pH is lowered. At pH 12 one fluid ounce of *Fe-3 Specific* will complex 15.5 grains of iron calculated as Fe_2O_3. At pH 6 and lower, one fluid ounce of *Versene Fe-3 Specific* will complex 183 grains of iron calculated as Fe_2O_3. *Versene Fe-3 Specific* does not complex calcium or magnesium but will inactivate Cobalt, Copper and Nickel. *Versene Fe-3 Specific* is available as a 47% solution with a specific gravity of 1.21.

VERSENE FE-3* was the first satisfactory complexing agent for inactivating trivalent iron, calcium, magnesium and other metallic salts. It softens water and inactivates any iron without precipitation. Available in solution or as a dry white powder. The solution is pale straw-colored, has a specific gravity of approximately 1.20, and a pH of 11.75 in a 1% solution.

VERSENE T* is for chelating ferric and divalent metal ions including hard water salts in caustic solutions. This new product deactivates ferric ions and dissolves insoluable iron compounds above pH 12 and in highly concentrated caustic solutions. At the same time it chelates hard water salts and other divalent metals. Effectiveness decreases only when the pH drops below 12. VERSENE T is stable and is neither attacked by nor decomposed in hot caustic solutions. It is compatible and can be mixed with the other Versenes if desired. One fluid ounce complexes at least 2.36 grams (or 36 grains) of iron as Fe_2O_3 plus 24 grains of calcium carbonate. Specific gravity is 1.18; total solids 55.5%.

VERSENE-9 the tri-sodium salt of EDTA in dilute solution has a pH of 9.3; recommended for use in Keltex printing pastes.

VERSENE* WATER HARDNESS TESTING KIT is for easily determining total water hardness in less than 2 minutes with accuracy of 1 grain of hardness per gallon. Versenate Method. Complete Kit $5.00 ea. Postpaid.

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- ★ *Visibly increase bottom whiteness*
- ★ *Stabilize and lengthen life of peroxide bath*
- ★ *Produce cleaner, softer fabric*
- ★ *Remove insoluble soap film*
- ★ *Improve efficiency of detergents*
- ★ *Completely and permanently soften hardest water*
- ★ *Prevent spotting during dyeing*
- ★ *Complex iron in any caustic solution*

Versen-ol®*—Newest of the versenes, is known chemically as N-hydroxy ethyl ethylene diamine tri acetic acid tri sodium salt. Versen-ol effectively complexes iron in alkaline solutions. Excessive amounts beyond those required to complex iron will complex other heavy metals including calcium and magnesium. Available in bulk. Additional information and samples on request.

*Patent Pending

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As water conditioners to: — Sequester Calcium, Magnesium, Iron, Heavy Metals • Inhibit Corrosion • Prevent Scum and Scale

QUADRAFOS and METAFOS are soluble, glassy sodium phosphates widely used in textile wet processing to improve detergency, dispersion and emulsification. As water conditioners they effectively sequester both calcium and magnesium, and protect against processing troubles due to dissolved iron in the water.

These polyphosphates improve product quality and operating efficiency in practically every textile operation from scouring and dyeing to printing and finishing. In detergent processes such as raw wool scouring and kier boiling of cotton, they turn out clear, clean goods in better condition for bleaching and dyeing. In rinsing, they speed removal of insoluble soaps and pectinates, and emulsify oils, waxes and other finishes without gumming or spotting.

The powerful dispersive action of these polyphosphates produces even, level penetration of dyestuffs, printing gums and materials used as pigments or fillers. In piece goods or package dyeing, QUADRAFOS and METAFOS bring out full, rich shades without spotting or streaking.

Forms: QUADRAFOS and METAFOS BEADS — clear, glass-like spheroids — about ¼" in diameter. Beads are usually preferred for stock solution.

QUADRAFOS and METAFOS GRANULAR may be predissolved in water or added dry to any process where there is sufficient agitation to affect solubility. Both are extremely soluble in water.

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Technical Service Dept.

9 Newman Avenue, Rumford 16, Rhode Island

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LYKOPON concentrated sodium hydrosulfite powder for reducing vat dyes and for stripping in alkaline and neutral solutions.

FORMOPON sodium sulfoxylate formaldehyde powder or lumps for discharge and vat printing.

ACRYSOL water-soluble sizes for synthetic and natural fibers and thickeners for pastes and dispersions.

RHONITE water-soluble urea formaldehyde condensates for crush resistance, stabilization against shrinkage and stretch, calendered effects, added weight and proper handle—all on a durable, washfast basis.

RHOPLEX aqueous, solvent-free dispersion of acrylic resins, for any type of hand desired—durable, abrasion-resistant, full and crisp, moderately firm, or soft and delustered.

RHOZYME concentrated enzyme products for efficient desizing under all conditions.

TAMOL dispersing agents for pigments and clays in dyeing, printing and backfilling operations.

TRITON synthetic organic surface-active agents for penetrating, wetting, emulsifying, softening, dispersing and scouring.

FORMOPON EXTRA, PROTOLIN W and PROTOLIN SX zinc hydrosulfites and sulfoxylates for stripping all types of fibers.

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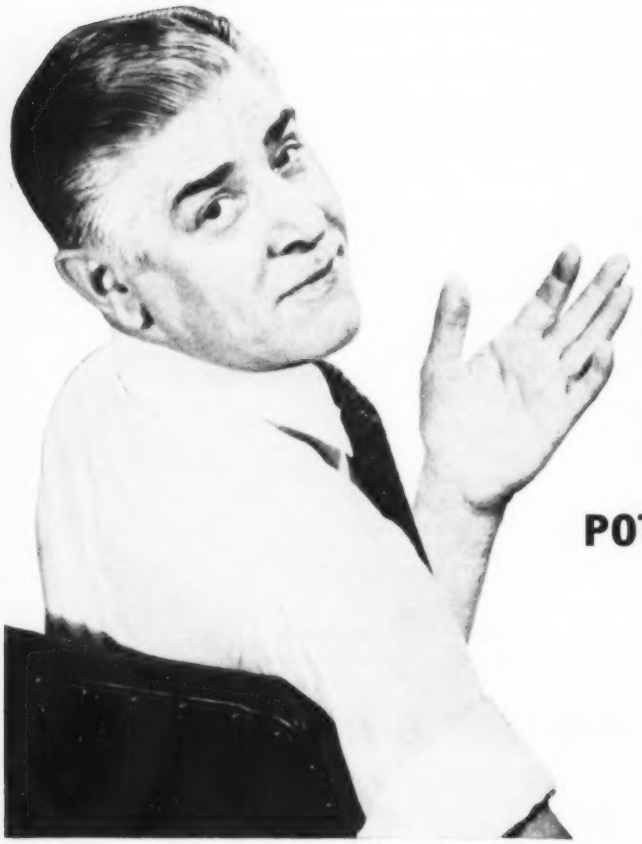

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Characteristics

- Effective on all fibers
- Unusually resistant to oxidation and rancidity.
- No effect on shade of dyed goods
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- Prevents yellowing of whites after aging
- Eliminates scorching at normal processing temperatures and time periods
- Lubricates fibers efficiently
- Facilitates high-speed sewing
- Speeds napping . . . provides softer, loftier nap
- Excellent anti-static properties
- No tendency toward tackiness, stiffness or mark-off on finished goods
- Profine can be used alone, or with urea, polyvinyl acetate, starch, dextrose, most gums, alkaline anti-fume finishes and many other finishing agents.
- Packed in 75-lb. fiber drums

ORVUS

ORVUS NEUTRAL GRANULES—a neutral alkyl aryl sulfonate.

ORVUS AB GRANULES—neutral 40% sodium alkyl sulfonate type.

ORVUS ES PASTE—a modified sodium alkyl sulfate.

ORVUS EXTRA GRANULES—a *complete* synthetic detergent. Sodium alkyl sulfate built with complex phosphates.

All three granular types of Orvus are "blown" products—white, free-flowing, dustless, non-gummy. Orvus ES Paste is a white, honey-like liquid at 70°F.

ORVUS Characteristics

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- Readily soluble
- Practically odorless
- Resistant to hard water
- Stable to acids and alkalies
- Resistant to oxidation
- Safe to all fibers and fabrics
- Excellent for processing all natural and man-made fibers

All types Orvus Granules packed in 50-lb. bags and 110-lb. fiber drums.
Orvus ES Paste packed in 470-lb. steel drums.

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PROXOL and PROXOL-T

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PROXOL	*General Characteristics*	PROXOL-T
Composition	Essentially non-saponifiable oils with efficient emulsifiers	Essentially non-saponifiable oils with saponifiable emulsifiers
Color	Clear reddish	Clear, light yellow
Pour point	Less than 20°F.	About 30°F.
Viscosity (Saybolt Universal)	350 sec.	150 sec.
Emulsion particle size	1 to 3 microns	1 to 3 microns
Self-emulsifiable	readily	Readily
Economy	requires less than conventional oils; also cuts soap and alkali usage	Requires less than many conventional oils; also cuts soap and alkali usage
Flash point	about 340°F	About 380°F.
Uniformity	excellent	Excellent

Operating Characteristics (applies to both types)

- Non-drying in bins
- Non-corrosive
- Anti-static
- Excellent lubrication
- Minimizes fiber breakage
- No discoloration on aging
- High resistance to oxidation
- Helps assure bright, level dyeings
- Packed in 410-lb. steel drums

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A pure, neutral textile soap, exceptionally safe for efficient processing of all fibers and fabrics. Contains a minimum of 92% anhydrous soap. Made in the form of thin flakes from highly refined, low-titered liquid oils.

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Indigosol Printing Purple IR
Indigosol Blue IBC powder
Indigosol Green IB powder
Indigosol Green IGG
Indigosol Green I3G
Indigosol Brown I3B
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Indigosol Black AB2N
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INDIGOSOLS

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Indigosol Golden Yellow IGK
Indigosol Golden Yellow IRK
Indigosol Brilliant Orange IRKL Paste
Indigosol Golden Orange I2R
Indigosol Orange HR
Indigosol Scarlet HB
Indigosol Pink IR
Indigosol Red IFBB
Indigosol Brilliant Violet I4R
Indigosol Red Violet IRRN
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Indigosol O4B
Indigosol O6B
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Product	Use	Function
Hycar Latex	cotton	permanent warp size to provide abrasion resistance during weaving; and wear resistance and color fastness to the finished fabric.
	rayon	permanent warp size with starch for increased seam strength.
	cotton	after-treatment to improve wearing qualities and to provide a full hand.
	rayon cotton	with urea-formaldehyde resin to prevent deterioration of fibers when large amounts of U-F resin are used for crease and wrinkle resistance.
	cotton wool	after-treatment to reduce crock particularly with red naphthol dyes.
	rayon cotton	binder for pigment coloring and printing.
	cotton	carrier for specialty active agents such as fungicides and flame proofing chemicals.
	cotton	binder for waxes and metallic salts used for water repellency or stain resistance.
	cotton rayon	binder for non-woven fabrics.
Geon Latex	cotton	filler to provide stiffness.
	cotton rayon	binder for pigment coloring and printing.
	cotton	carrier for specialty active agents such as fungicides and flame proofing chemicals.
	cotton	binders for waxes and metallic salts used for water repellency or stain resistance.
	cotton rayon	binder for non-woven fabrics.
Good-rite TS-20	nylon acrylics	warp and single end sizing.
Good-rite z.a.c.	cotton jute	as rodent repellent for specialty treatment of fabric, hose, cordage, etc.
Good-rite β-propiolactone	wool cotton	fiber modification.
Harmon Colors	rayon nylon acrylics acetate	color dispersion to be added prior to filament formation providing entire fiber pigmentation.
	cotton	as processed pulps for surface printing and dyeing.

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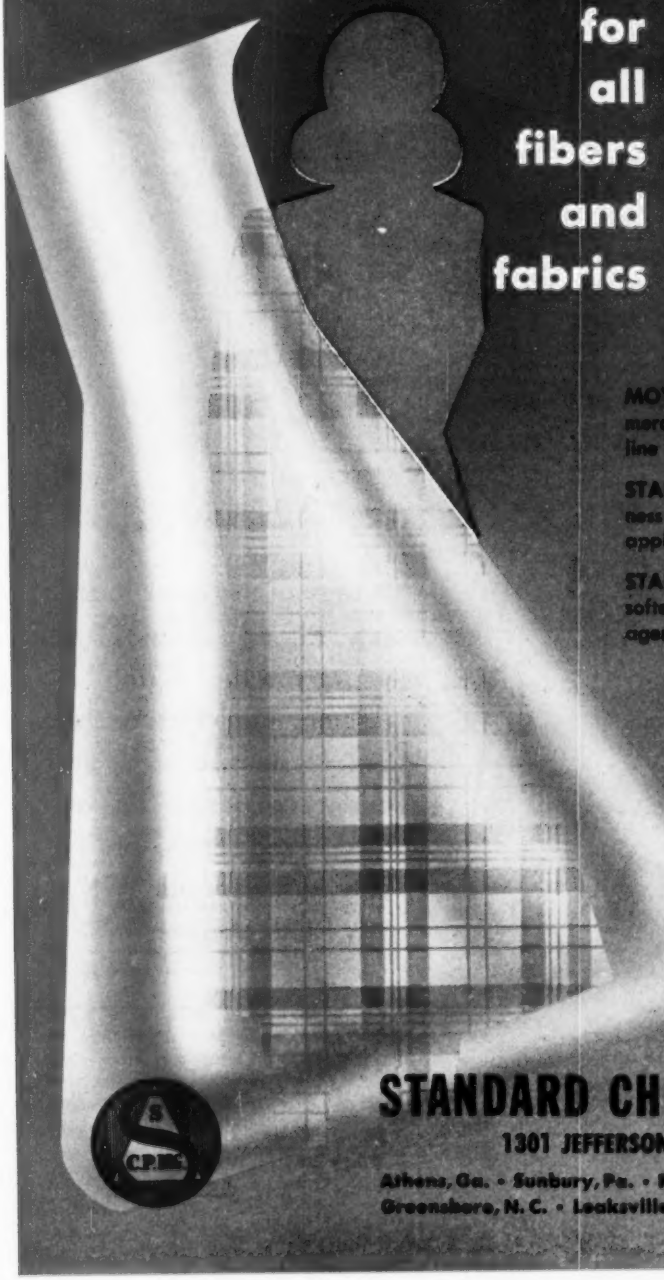

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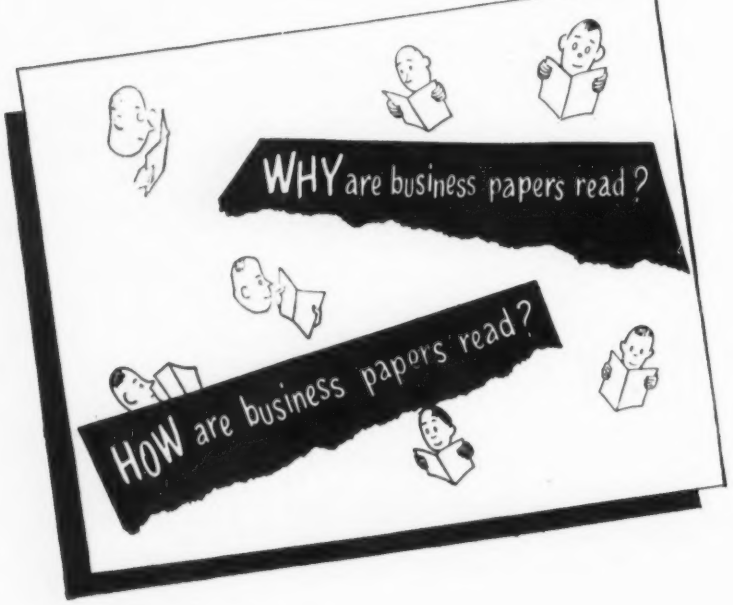

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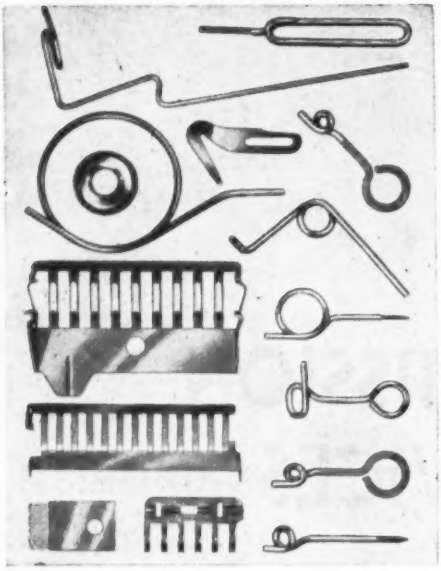

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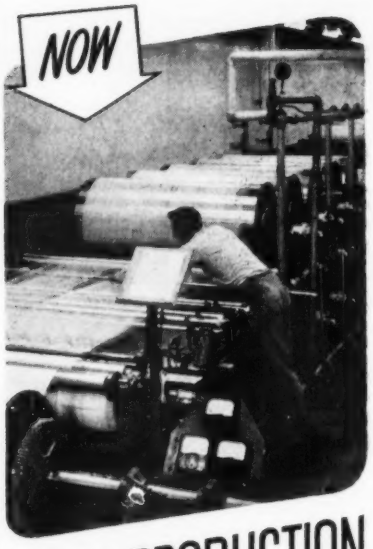

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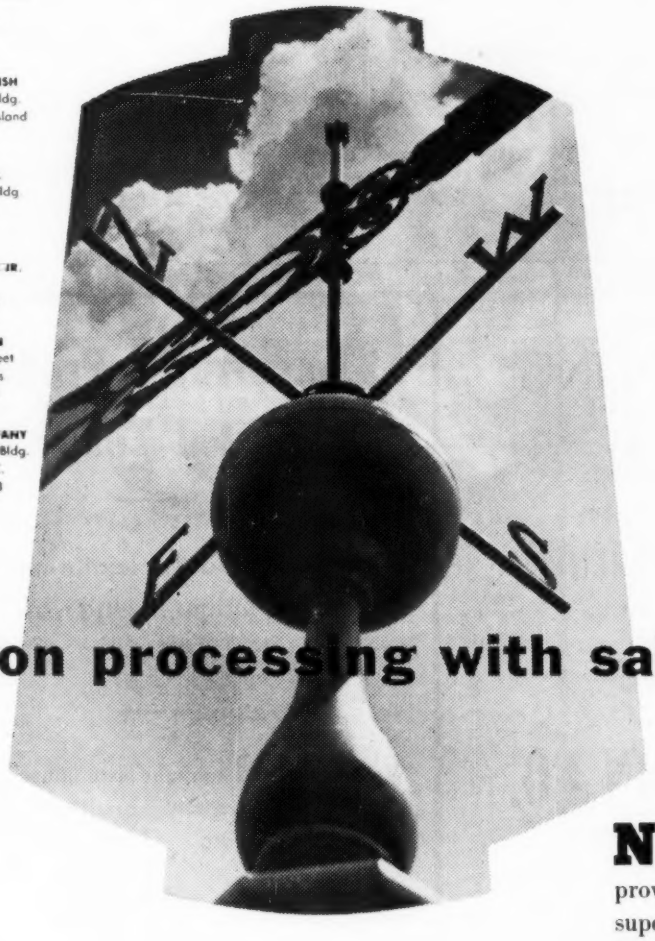

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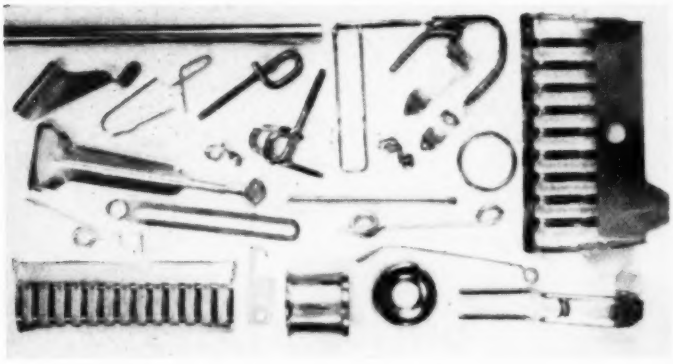

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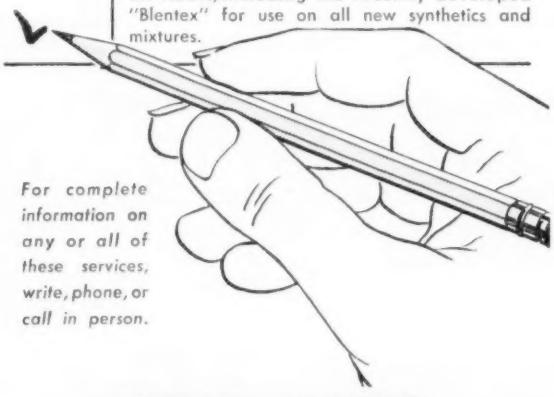

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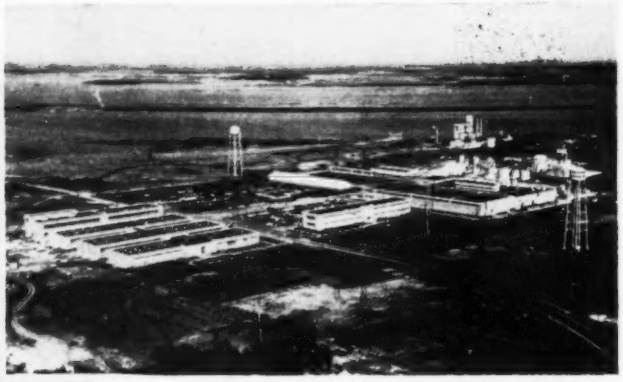

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4—Bentley Komet Link-Links 4-½", 84 needles, double feed, two have float attachments. Lot No. 26484.

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The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

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Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

TEXTILE BIBLIOGRAPHY

25¢ each, 15¢ in lots of 20 or more

An up-to-date listing of the important English-language books on textile technology. Twelve-page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

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HOPI ACALA

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CLASSIFIED LIST

of Companies Supplying Products and Services to the TEXTILE INDUSTRY

Machinery, equipment, chemicals, dyestuffs, other supplies, and services are listed alphabetically on the following pages, together with the names and addresses of companies supplying them to the textile industry.

In general, products and services are listed according to their noun, with descriptive word or words following, i.e.: DRIVES—Hydraulic. If a product is peculiar to the textile industry, it is listed under the word or words that represent the accepted terminology of the industry, i.e.: ROVING FRAMES.

Cross references are provided wherever necessary to facilitate convenient use of these listings.

The names of companies that are advertisers in this issue are printed in bold face, and the page numbers of the advertisements of these companies are included to permit quick and easy reference to more information on the products or services concerned.

Trade names of equipment and supplies are included under the proper headings, with cross references to the companies using the trade names.

In compiling these listings, over 2,700 questionnaires were sent to companies to ascertain products in production and available for distribution within a reasonable time. Because replies were neither uniform nor complete, this first edition of the Classified List is bound to contain some errors and omissions. We shall be grateful to both reader and advertisers who call our attention to improvements that can be made in the 1954 edition.

ABRASIVES

Behr-Manning Corp. Div., Norton Co., 754 Siefert St., Troy, N. Y.

ABSORBENT-COTTON PROCESSING MACHINES

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Thies, B., Coesfeld/Westf., Germany
Whitin Machine Works, Whitinsville, Mass.

ACCELERATORS—*Rubber*

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
MONTGOMERY BROS., INC., Penrose & Packer Aves., Philadelphia 45, Pa. ADV. PG. 288.
Sharples Chemicals, Inc., 123 Broad St., Philadelphia 9, Pa.
Testworth Laboratories, Inc., 407 South Dearborn St., Chicago 5, Ill.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N. J.

ACETAMIDE (See Solvents)

ACETATE DYES (See Dyes—Acetate)

ACETATE SIZINGS (See Sizing Agents)

ACETATE YARNS & FIBERS (See Yarns & Fibers)

ACETATES (See under individual headings; Aluminum—Salts of Acetate, etc.)

ACETIC ACID (See Acids)

ACETIC ANHYDRIDE

Carbide & Carbon Chemicals Co., Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Eastman Chemical Products, Inc., Kingsport, Tenn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

ACETIN (See Solvents)

ACETONE (See Solvents)

ACID COLORS & DYES (See Dyes)

ACIDS

Acetic ..... A
Acetic, Glacial ..... B
Benzoic C
Boric ..... D
Carbolic ..... E
Citric ..... F
Cresylic ..... G
Fluoboric ..... H
Formic I
Fumaric ..... J
Hydrochloric ..... K
Hydrofluoric L
Lactic ..... M
Nitric ..... N

ACIDS Con't.

Oxalic ..... O
Phosphoric ..... P
Picric ..... Q
Salicylic ..... R
Sulfuric ..... S
Sulfurous ..... T
Tannic ..... U
Tartaric V

Aluminum Co. of America, New Kensington, Pa. H, L
American Agricultural Chemical Co., 50 Church St., New York 7, N. Y. P, S
Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J. B, K, N, O, P, S
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y. E, G
Belle Alkali Co., Belle, W. V. K
Blockson Chemical Co., Joliet, Ill. S
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. B
Celanese Corp. of America, Chemical Div., 150 Madison Ave., New York 16, N. Y. A, B
Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y. A, B
CLINTON FOODS INC., Clinton, Iowa M
ADV. PG. 288.
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa. K
Consolidated Chemical Industries, Inc., 111 Sutter St., San Francisco 4, Cal. S
Crossett Chemical Co., Crossett, Ark. A, B
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y. D
Dow Chemical Co., Midland, Mich A, E, K
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. I, K, M, N, S
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. Q
ADV. PG. 258, 259.
Eastman Chemical Products, Inc., Kingsport, Tenn. A, B
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, B, D, E, F, G, I, J, K, M, N, L, O, P, Q, S, T, U, V
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. G
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. A, B, D,
ADV. PG. 267 I, K, N, O, P, S
Harshaw Chemical Co., 145 East 97 St., Cleveland, Ohio D, F, K, O, P, S, V
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del. A
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y. C, K
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo. A, B, D, E, F, I, M, N, O, P, S, T, U, V
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. N, S
ADV. PG. 2.

MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. A, K, N, S
ADV. PG. 260, 261
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. A, E, J, K, N, P, S
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo. P
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, B, D, I, K, N, O, P, S
New York Color & Chemical Co., 374 Main St., Belleville, N. J. U
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. K, N, S
Pfizer & Co., Inc., Chas., 630 Flushing Ave., Brooklyn 6, N. Y. F, O
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa. G, K, S
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. S
ADV. PG. 272
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N. Y. B
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio A, B
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. D, F, S, V
Tennessee Corp., Organic Chems. Div., 617-629 Grant Blvd., Atlanta, Ga. S
Tennessee Prod. & Chemical Corp., First American Natl. Bank Bldg., Nashville, Tenn. A, B, C, K
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y. K, N, S
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. I, O, P
Virginia Smelting Co., West Norfolk, Va. T
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. P
ADV. PG. 287.

ACIDS—*Fatty*

Oleic ..... **A**
Stearic ..... **B**

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio B
Armour & Co., Chemical Div., 1355 West 31 St., Chicago 9, Ill. A, B
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I. A, B
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del. A, B
Celina Stearic Acid Co., 410 South Ash St., Celina, Ohio A, B
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. A, B
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio A, B
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio A
Hardesty Co., Inc., W. C. & Century Stearic Acid Products, Inc., 41 East 42 St., New York 17, N. Y. A, B
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. A, B
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. A
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, B
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio A
Swift & Company, 4115 Packers Ave., Chicago 9, Ill. A, B
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N. J. A, B

ACRILAN YARNS & FIBERS (See Yarns & Fibers)

ACRYLIC YARNS & FIBERS (See Yarns & Fibers)

ADAPTERS—*Spindle*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me.
ADV. PG. 176.
Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
Hartford Mach. Screw Co., P. O. Box 1440, Hartford, Conn.
Meadows Mfg. Co., Murphy & Astor Aves., S. W., Atlanta, Ga.
Regnery Corp., F. L., 613 West 16 St., Chicago 16, Ill.
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C.
Whitin Machine Works, Whitinsville, Mass.

ADHESIVES

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Resinous Chem. Corp., 102 Foster St., Peabody, Mass.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arabol Mfg. Co., 110 East 42 St., New York 17, N. Y.
Armour & Co., Adhesive Div., 1355 West 31 St., Chicago 9, Ill.
ARMSTRONG CORK CO., TEXTILE PRODS. CORP., 8400 Arch St., Lancaster Pa.
ADV. PG. 185.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Borden Co., The, 350 Madison Ave., New York, N. Y.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Cabot, Inc., Samuel, 141 Milk St., Boston 9, Mass.
Catalin Corp. of America, 1 Park Ave., New York, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Consolidated Chemical Industries, Inc., 111 Sutter St., San Francisco 4, Calif.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
CORN PRODUCTS SALES CO., 17 Battery Pl., New York 4, N. Y. ADV. PG. 266.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
Durkee Atwood Co., Industrial Div., 215 Seventh St., N. E., Minneapolis 13, Minn.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Flintkote Co., The, Ind. Prods. Div., 3 West 46th St., New York 20, N. Y.
GENERAL CHEMICAL DIV., ALLIED CHEM & DYE CORP., 40 Rector St., New York 6, N. Y.
ADV. PG. 267.
General Latex & Chem. Corp., 666 Main St., Cambridge, Mass.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Industrial Tape Corp., New Brunswick, N. J.
Kem Products Co., Inc., 229 High St., Newark, N. J.
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.
Minnesota Mining & Mfg. Co., 900 Fauqier Ave., St. Paul 6, Minn.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
MONTGOMERY BROS., INC., Penrose & Packer Aves., Philadelphia 45, Pa. ADV. PG. 288.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
National Starch Products Inc., 270 Madison Ave., New York 16, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. ADV. PG. 284.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
STALEY MFG. CO., A. E., Lock Box 151 A, Decatur, Ill. ADV. PG. 271.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Testworth Laboratories, Inc., 407 South Dearborn St., Chicago 5, Ill.
Bakelite Co. Div., Union Carbide & Carbon Corp., 300 Madison Ave., New York 17, N. Y.
U. S. Industrial Chemicals Co., 120 Broadway, New York 5, N. Y.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
U. S. Stoneware Co., The, Akron 9, Ohio

ADJUSTERS—*Harness* (See Harness Adjusters)

AFTERCOOLERS (See Air Compressors)

AFTERTREATING AGENTS (See Fixing Agents)

AGERS

Butt—See New England Butt Co.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Haveg Corp., Newark, Del.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. ADV. PG. 130, 131.
New England Butt Co., 304 Pearl St., Providence 7, R. I.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I.
ADV. PG. 134, 135.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y.
ADV. PG. 155.

AGITATORS (See Mixers—Mechanical)

AIR COMPRESSORS

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Bellows Co., The, Akron 9, Ohio
Brunner Mfg. Co., 1821 Broad St., Utica, N. Y.
Carrier Corp., 302 South Geddes St., Syracuse 4, N. Y.
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.
Curtis Mfg. Co., Pneumatic Machinery Div., 1905 Kienlen Ave., St. Louis 20, Mo.
Curtis Mfg. Co., Refrigerating Machine Div., 1992 Kienlen Ave., St. Louis 20, Mo.
Fuller Co., Fuller Bldg., Catasaqua, Pa.
Gardner-Denver Co., Quincy, Ill.
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.
Joy Mfg. Co., Henry W. Oliver Bldg., Pittsburgh, Pa.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S. Minneapolis 8, Minn.
Nash Engineering Co., Wilson Rd., South Norwalk, Conn.
Oilfregas—see Pennsylvania Pump & Compressor Co.
Oiltreair—see Pennsylvania Pump & Compressor Co.
Pennsylvania Pump & Compressor Co., P. O. Box 222, Easton, Pa.
Schramm, Inc., West Chester, Pa.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.
Spencer Turbine Co., 484 New Park Ave., Hartford 6, Conn.
Unistage—See Schramm, Inc.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

AIR CONDITIONERS—*Central Refrigeration and Air Washer Types* (See also Humidifiers—Room)

Air & Refrigeration Corp., 439 Madison Ave., New York 22, N. Y.
Airtemp Div., Chrysler Corp., 1119 Leo St., Dayton 1, Ohio
AMCO—See American Moistening Co.
All Year—See Servel, Inc.
AMERICAN MOISTENING CO., 260 West Exchange St., Providence 1, R. I. ADV. PG. 102.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Brunner Mfg. Co., 1821 Broad St., Utica, N. Y.
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Bush Manufacturing Co., 179 South St., West Hartford, Conn.
Carrier Corp., 302 South Geddes St., Syracuse 4, N. Y.
Centrispray—See Bahnson Co., The
Certified Climate—See Parks-Cramer Co.
Clarage Fan Co., 619 Porter St., Kalamazoo, Mich.
Curtis Manufacturing Co., Refrigerating Machine Div., 1992 Kienlen Ave., St. Louis 20, Mo.
Frigidaire—See General Motors Corp.
General Motors Corp., 300 North Taylor St., Dayton, Ohio
Governair Corp., 513 North Blackwelder, Oklahoma City 1, Okla.
Hunter Fan & Ventilating Co., 57 Murray St., New York 7, N. Y.
Mario Coil Co., 6135 Manchester Ave., St. Louis 1, Mo.
McQuay, Inc., 1600 Broadway, N. E. Minneapolis 13, Minn.
Multitherm—See Clarage Fan Co.
Parks-Cramer Co., Fitchburg, Mass.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Servel, Inc., Evansville 20, Ind.
Trane Co., Refrigeration Dept., 2nd & Cameron, LaCrosse, Wis.
Vilter Manufacturing Co., 2217 South First St., Milwaukee 7, Wis.
Weathermaster—See Carrier Corp.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.
Young Radiator Co., 709 Marquette St., Racine, Wis.

AIR CONDITIONERS—*Unit-Type* (See also Humidifiers—Room)

AIR-PERME-ATOR MFG. CO., 300-2 Preakness Ave., Paterson 2, N. J. ADV. PG. 243.
Airtemp Div., Chrysler Corp., 1119 Leo St., Dayton 1, Ohio
Ajax Corp. of America, 2509 Washington Ave., Evansville 14, Ind.
AMCO—See American Moistening Co.
American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
AMERICAN MOISTENING CO., 260 West Exchange St., Providence 1, R. I. ADV. PG. 102.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Brunner Mfg. Co., 1821 Broad St., Utica, N. Y.
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Bush Manufacturing Co., 179 South St., West Hartford, Conn.

Chelsea Products, Inc., 639 South Ave., Plainfield, N. J.
Curtis Manufacturing Co., Refrigerating Machine Div., 1992 Kienlen Ave., St. Louis 20, Mo.
Frigidaire—See General Motors Corp.
General Motors Corp., 300 North Taylor St., Dayton, Ohio.
Governaln Corp., 513 North Blackwelder, Oklahoma City 1, Okla.
Humiduct—See Bahnson Co., The
Marlo Coil Co., 6135 Manchester Ave., St. Louis 1, Mo.
McQuay, Inc., 1600 Broadway, N. E., Minneapolis 13, Minn.
Parks-Cramer Co., Fitchburg, Mass.
RIHCO—See R. I. Humidifier & Ventilating Co.
R. I. HUMIDIFIER & VENTILATING CO., 99 Chauncy St., Boston 11, Mass. ADV. PG. 214.
Roomaster—See Ajax Corp. of America
Servel, Inc., Evansville 20, Ind.
Trane Co., Refrigeration Dept., 2nd & Cameron, LaCrosse, Wis.
Unitrane—See Trane Co.
Vilter Manufacturing Co., 2217 South First St., Milwaukee 7, Wis.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

AIR CYLINDERS (See Power Units—Hydraulic & Pneumatic)

AIR DIFFUSERS

Anemostat Corp. of Amer., 10 East 39th St., New York 16, N. Y.
Barber-Colman Co., Rockford, Ill.

ALBUMINS

Armour & Co., Adhesive Div., 1355 West 31 St., Chicago 9, Ill.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.

ALCOHOL (See Solvents)

ALIZARINE ASSISTANTS (See Oil—Fiber Process—Turkey Red Oil)

ALIZARINE COLORS (See Dyes)

ALKALIS (See under individual headings; Sodium—Salts of, Potassium—Salts of)

ALPHA NAPHTHOL

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

ALPHA NAPHTHYLAMINE

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y.

ALUM (See Aluminum—Salts of—Potassium Sulfate)

ALUMINUM—Salts of

Acetate ..... **A**
Chloride ..... **B**
Cryolite (Synthetic) ..... **C**
Fluoride ..... **D**
Formate ..... **E**
Hydroxide ..... **F**
Oleate ..... **G**
Potassium Sulfate (Alum) ..... **H**
Stearate ..... **I**
Sulfate ..... **J**

Alrose Chemical Co., P. O. Box 1294, Providence, R. I. ..... E
Aluminum Co. of America, New Kensington, Pa. ..... C, D
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I. ..... G, I
Blockson Chemical Co., Joliet, Ill. ..... F
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. ..... A, E
Consolidated Chemical Industries, Inc., 111 Sutter St., San Francisco 4, Calif. ..... H, J
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. ..... B, J
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, F, G, H, I, J
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... I, J
GENERAL CHEMICAL DIV., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y. ADV. PG. 267. ..... B, H, J
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio ..... B, G, I
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y. ..... B
Jordon Company, 51st & Merrimac Ave., Chicago, Ill. ..... B
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. ..... A, B, F, H, I, J
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261. ..... J
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. ..... B, J
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. ..... A, E, H, I
Nopco Chemical Co., First & Essex Sts., Harrison, N. J. I
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. ..... F, J
Reynolds Metals Co., 2500 South Third St., Louisville 8, Ky. ..... F
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. ..... B
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y. ..... G, I
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. ..... E
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y. I
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. ..... A

AMMETERS & VOLTMETERS

General Electric Co., Schenectady 5, N. Y.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

AMMONIA (See Ammonium—Salts of—Hydroxide)

AMMONIUM—Salts of

Acetate ..... **A**
Carbonate ..... **B**
Chloride ..... **C**
Hydroxide (Ammonia) ..... **D**
Hydroxide (Tetra Substituted) ..... **E**
Persulfate ..... **F**
Phosphates ..... **G**
Silicoflouride ..... **H**
Sulfate ..... **I**
Sulfocynanide ..... **J**
Tartrate ..... **K**
Vanadate ..... **L**

American Agricultural Chemical Co., 50 Church St., New York 17, N. Y. ..... B, H
Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J. ..... D
BECCO SALES CORP., River Road & Sawyer St., Buffalo, N. Y. ..... F
ADV. PG. 265.
Berk & Co., F. W., Park Place East, Wood-Ridge, Bergen Co., N. J. L
Consolidated Chemical Industries, Inc., 111 Sutter St., San Francisco 4, Calif. I
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y. ..... C, G, I
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. ..... D, I
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C, D, F, G, I, J, K, L
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... B
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267. ..... A, C, D, F, I
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio ..... B, C, D, I, J
Jordan Company, 51st & Merrimac Ave., Chicago, Ill. C
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa. I
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. ..... A, B, C, D, F, G, I
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ..... D, G, I
ADV. PG. 2.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261. ..... D
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. ..... D, G
Monsanto Chemical Co., Phosphate Co., 1724 South Second St., St. Louis 4, Mo. ..... G
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. ..... C, D
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. ..... C, D, F
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa. I
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio I
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. C
ADV. PG. 274.
Tesco Chemicals, Inc., P. O. Box 7128, Station C, Atlanta 5, Ga. ..... D
Vanadium Corp. of America, 420 Lexington Ave., New York 17, N. Y. L
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. ..... G

AMYL ACETATE (See Solvents)

AMYL ALCOHOL (See Solvents)

ANGLES—*Steel or Stainless Steel* (See Steel)

ANILINE

Aniline ..... **A**
Aniline Hydrochloride ..... **B**

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y. ..... A, B
Dow Chemical Co., Midland, Mich. ..... A
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259 ..... A, B
du Pont de Nemours & Co., Inc., E. I., Explosives Dept., Wilmington 98, Del. ..... A
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... A, B
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. ..... A
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. ..... A, B

ANILINE COLORS (See Dyes)

ANILINE OIL (See Aniline)

ANILINE SALT (See Aniline—Hydrochloride)

ANTICHLORS

Ansul Chemical Co., Marinette, Wis.
BECCO SALES CORP., River Road & Sawyer St., Buffalo, N. Y. ADV. PG. 265.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
Elmer & Amend, 635 Greenwich St., New York 14, New York
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontairo St., Chicago, Ill.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Virginia Smelting Co., West Norfolk, Va.

ANTICREASING AGENTS (See Crease-Proofing Compounds)

ANTICROCKING AGENTS

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.

Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio. ADV. PG. 278.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Verona Dyestuffs, Springfield Road, Union, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

ANTIFELTING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.

ANTIFOAMING AGENTS

Alrose Chemical Co., P. O. Box 1294, Providence, R. I.
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co.,225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dow Chemical Co., Midland, Mich.
Dow-Corning Corp., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
General Electric Co., Chemical Div., Pittsfield, Mass.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Tex Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Ultra Chemical Works, Inc., 2 Wood St., Paterson 4, N. J.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

ANTIMONY CHLORIDE (See Mordants)

ANTIMONY FLUORIDE (See Mordants)

ANTIMONY LACTATE (See Mordants)

ANTIMONY OXIDE (See Mordants)

ANTIMONY POTASSIUM TARTRATE (See Mordants)

ANTIMONY SALT (See Mordants)

ANTIOXIDANTS—Oil & Fat

Eastman Chemical Products, Inc., Kingsport, Tenn.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Sindar Corp., 330 West 42nd St., New York 36, N. Y.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

ANTIOXIDANTS—*Rubber*

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
American Resinous Chem. Corp., 102 Foster St., Peabody, Mass.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Dow Chemical Co., Midland, Mich.
Eastman Chemical Products, Inc., Kingsport, Tenn.
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
MONTGOMERY BROS., INC., Penrose & Packer Aves., Philadelphia 45, Pa. ADV. PG. 288.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Testworth Laboratories, Inc., 407 South Dearborn St., Chicago 5, Ill.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.

ANTIOXIDANTS—*Vat Dye*

DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.

ANTISEPTICS

Dolge Co., The, C. B., Ferry Lane, Westport, Conn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Electro Chemical Products Corp., 60 Franklin St., East Orange, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Nuodex Products Co., Inc., 830 Magnolia Ave., Elizabeth 6, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Rampel Chemical Co., 432 Waverly Ave., Mamaroneck, N. Y.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Sindar Corp., 330 West 42nd St., New York 36, N. Y.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.

ANTI-SLIP COMPOUNDS

Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City, N. J.

ANTI-STATIC AGENTS (See also Static Neutralizers)

American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa.
American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Dow Chemical Co., Midland, Mich.
Drew Co., Textile Chemicals Dept., 15 East 26 St., New York 10, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
STANDARD CHEMICAL PRODUCTS INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
STATIKIL, Div. of J. E. Doyle Co., 1224 W. Sixth St., Cleveland 13, Ohio. ADV. PG. 282
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

APPRAISERS—*Plant* (See Engineering Services)

APRONS

Canvas ..... **A**
Comb (See Aprons—Gill Box)
Condenser (See Aprons—Rub)
Decating ..... **B**
Feed ..... **C**
Gill Box, Comb & Converter ..... **D**
Long Draft ..... **E**
Picker (See Aprons—Feed)
Rub ..... **F**
Slat (See Aprons—Feed)
Spinning (See Aprons—Long Draft)
Strip (See Aprons—Feed)

Aetna Felt Co., 204 Centre St., New York 13, N. Y. B
Albany Felt Co., 1373 Broadway, Albany 1, N. Y. B
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185 . . . E, F
Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ..... D, E, F
BARKER COMB & RUB DIV., Souderton, Pa. ..... F
ADV. PG. 204.
Bemis Bro. Bag Co., 111 North Fourth St., Box 32, St. Louis, Mo. ..... A
Best & Co., Edward H., 222 Purchase St., Boston, Mass. ..... B
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass. ..... F
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy ..... E
Charlotte Leather Belting Co., 309 East 12th St., Charlotte, N. C. ..... E
Daniels, Inc., C. R., Daniels, Md. ..... A, C
DAVIS & FURBER MACHINE CO., North Andover, Mass. ..... C, D, F
ADV. PG. 172.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio ..... E, F
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ..... A, C
ADV. PG. 169.
Fiber Meter—See Textile Equipment Corp.
G. S.—See General Scientific Equip. Co.
General Scientific Equip. Co., 2760 West Huntingdon St., Philadelphia, Pa. ..... A
Gessner Co., David, 41 Fremont St., Worcester 3, Mass. ..... B
Grakorub—See Graton & Knight Co.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass. ..... D, F
Harwood & Son, 50 Lagrange St., Worcester 8, Mass C
HAY LEATHER CO. INC., JAMES E., 244 Smith St., Lowell, Mass. ..... C, D, F
ADV. PG. 208.
Holdsworth Gill Screw Co. Inc., 55 Sabin St., Pawtucket, R. I. ..... D
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa. ..... D
Hunter Mach. Co., James, North Adams, Mass. C
Kearny Mfg. Co. Inc., 681 Schuyler Ave., Kearny, N. J. C
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ..... A
ADV. PG. 199.
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J ..... B
Mertecfelt Corp., P. O. Box 688, Englewood, N. J B
Norlander-Young Machine Co., York Rd., Gastonia, N. C. ..... A, C
PARKS & WOOLSON MACHINE CO., Springfield, Vt . . B
ADV. PG. 192.
Perfection—See Graton & Knight Co.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa C
ADV. PG. 113.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J ..... F
Research—See Graton & Knight Co.
Roberts Company, P. O. Box 931, Sanford, N. C. . . E
SARGENT'S SONS CORP., C. G., Graniteville, Mass ADV. PG. 127 ..... A, C, F
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y ..... A, D, F
Southern Plastics Co., 408 Pendleton St., Columbia, S. C ..... G
Special Process Evenized—See Hood Co., R. H.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. C
ADV. PG. 169.
Textile Leather & Cement Co., 40 Andrews St., Lowell, Mass. ..... D
Texto—See Textile Leather & Cement Co.
TODD-LONG PICKER APRON CO., Gastonia, N. C. . . . C
ADV. PG. 236.
Truche Leather Co., Peabody, Mass. ..... D
Tru-Le-Co—See Truche Leather Co.
Vanderherchen, Inc., William H., 3301 Westmoreland St., Philadelphia 29, Pa ..... A
Whitin Machine Works, Whitinsville, Mass . . . A, C, E, F

ARCHITECTS (See Engineering Services)

ARGOLS (See Mordants)

AROMATICS (See Odor-Masking Agents)

ARROWROOT STARCH (See Starch—Natural)

ASBESTOS-PROCESSING MACHINES

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
Rietz Mfg. Co., 150 Todd Rd., Santa Rosa, Calif.
Roy & Son Co., B. S., 775 Southbridge St., Worcester 3, Mass.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
Whitin Machine Works, Whitinsville, Mass.

ATOMIZERS—*Humidifying* (See Humidifiers—Room, Nozzles—Spray)

AUTOSTARTERS (See Controls—Automatic & Manual Motor)

AZO DYES (See Dyes—Naphthol)

AZOIC DYES (See Dyes—Naphthol)

BACK-DRYERS

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.

BACK-FILLING MACHINES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

BACK-GRAY (See Cloth—Mechanical)

BACKWASHING MACHINE

PRINCE SMITH & STELLS, LTD., Keighley, England Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

BACK-WINDERS

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

BACTERICIDES (See Mildew Preventives)

BAGGING MACHINE

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

BAGS—*Burlap*

Bemis Bro. Bag Co., 111 North Fourth St., Box 32, St. Louis, Mo.
Tite-Fit Tubing—See Bemis Bro. Bag Co.

BAGS—*Canvas*

Bemis Bro. Bag Co., 111 North Fourth St., Box 32, St. Louis, Mo.
Daniels Inc., C. R., Daniels, Md.
Holly Pneumatic Sys. Inc., 15-I-East 40th St., New York 16, N. Y.
STEELE CANVAS BASKET CO., INC., 199 Concord Turnpike, Cambridge 40, Mass. ADV. PG. 206.
Van—See Vanderherchen, Inc., William H.
Vanderherchen, Inc., William H., 3301 Westmoreland St., Philadelphia 29, Pa.

BAGS—*Dyeing & Soaking* (See also Tubing—Knit Dye)

Mertecfelt Corp., P. O. Box 688, Englewood, N. J.

BAGS—*Loom* (See Bags—Canvas or Bags—Burlap)

BAGS—*Soaking* (See Bags—Dyeing & Soaking)

BAGS—*Transparent* (See Paper—Transparent)

BALANCES—*Chemical & Yarn or Laboratory* (See Scales—Laboratory)

BALE BREAKERS

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Fitzpatrick Co., W. J., 1001 West Washington Blvd., Chicago, Ill.
Giant—See Taylor-Stiles & Co.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by; Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY, Repr. by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Taylor-Stiles & Co., 15 Bridge St., Riegelsville, N. J.
Whitin Machine Works, Whitinsville, Mass.

BALING PRESSES

Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.
Adco—See Columbus Steam Pump Works Co.
Beaty Machine Co., J. T., 809 North Graham St., Charlotte 1, N. C.
Columbus Steam Pump Works Co., 724 West Gay St., Columbus 8, Ohio
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Economy Baler Co., 1254 North Main St., Ann Arbor, Mich.
LOGEMANN BROTHERS CO., 3104 West Burleigh St., Milwaukee, Wis. ADV. PG. 231.
Lummus Cotton Gin Co., Columbus, Ga.

BALLING HEADS

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass. ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.

BALL WINDING MACHINES (See Winders—Ball)

BALLING MACHINES (See Warpers—Ball)

BANDING MACHINES

Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
HAYSSEN MFG. CO., 1305 St. Clair Ave., Sheboygan, Wis. ADV. PG. 173.

BANDS—*Box Strapping* (See Strapping—Box & Carton)

BANDS—*Hosiery* (Paper)

Nashua Gummed & Coated Paper Co., 1935 Clark St., Nashua, N. H.
Gates Co., N. T., Fifth & Chestnut St., 801 Drexel Bldg., Philadelphia, Pa.
Surehold—See Nashua Gummed & Coated Paper Co.

BANDS—*Mule, Spinning & Twisting Bands*

Globe Woven Belting, 1400 Clinton St., Buffalo, N. Y.
Hope Webbing Co., P. O. Box 1495, Providence 1, R. I.
Lambeth Rope Corp., 627 Tarklin Hill Rd., New Bedford, Mass.
Meadows Mfg. Co., Murphy & Astor Aves., S. W., Atlanta, Ga.

BANDS—*Strapping* (See Strapping—Box & Carton)

BANDS—*Tie* (See Strapping—Box & Carton)

BANKERS (See Factors—Textile)

BARIUM—Salts of

Chloride ..... **A**
Peroxide ..... **B**
Sulfate ..... **C**

du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. ..... A
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ..... A
ADV. PG. 267.
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio ..... A, B, C
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y. C
WESTVACO CHEMICAL DIV., FOOD MACHINERY and CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ..... B, C
ADV. PG. 287.

BARRELS—*Beam*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass. ADV. PG. 193.
Burlington Engrg. Co. Inc., Graham, N. C.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Mc CASKIE INC., Wm. Forge Rd. Westport, Mass. Adv. Pg. 208.
MILTON MACHINE WORKS, INC., P. O. Box 189, Milton, Pa. ADV. PG. 202.
Salisbury Iron Works, Salisbury, N. C.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.

BARRELS—*Fiber*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Federal Fibre Corp., 3704 Tenth St., Long Island City, N. Y.
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. ADV. PG. 219.
Kennett—See Fibre Specialty Mfg. Co.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.

BARS—*Bronze* (See Bronze Bars)

BARS—*Dobby* (See Lags—Picker)

BARS—*Steel or Stainless Steel* (See Steel)

BASIC DYES (See Dyes)

BASKETS—*Canvas*

COLEMAN CO., INC., Greenville, S. C. ADV. PG. 80, 81.
Colson Corp., The, Cedar St., Elyria, Ohio
Dandux—See Daniels, Inc., C. R.
Daniels, Inc., C. R., Daniels, Md.
Glosstex—See Daniels, Inc., C. R.
Lane & Bros., W. T., Poughkeepsie, N. Y.
Meese, Inc., 108 St. Michaels Ave., Madison, Ind.
Sanitex—See Daniels, Inc., C. R.
Shamrock—See Meese, Inc.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.
STEELE CANVAS BASKET CO., INC., 199 Concord Turnpike, Cambridge 40, Mass. ADV. PG. 206.
Vanderherchen, Inc., William H., 3301 Westmoreland St., Philadelphia 29, Pa.

BASKETS—*Extractor*

American Laundry Machy. Co., Cincinnati 12, Ohio
Brighton Copper Wks, Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Haring & Stephens Co., 635 McBride Ave., West Paterson, N. J.

BASKETS—*Fiber* (See also Boxes—Fiber & Wood)

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Convoy, Inc., 3424 Navarre Rd., S. W., Canton, Ohio
Federal Fibre Corp., 3704 Tenth St., Long Island City, N. Y.
Fiberok—See Federal Fibre Corp.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.

BASKETS—*Perforated Metal*

Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass.
Blackburn Smith Mfg. Co., 95 River St., Hoboken, N. J.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Burlington Engrg. Co. Inc., Graham, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Sterling Engineering & Mfg. Co., 173 Gilligan St., Wilkes Barre, Pa.
Tyler Co., W. S., 3615 Superior Ave., Cleveland 14, Ohio

BASKETS—*Wire*

Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass.
Brighton Copper Wks., Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Cambridge Wire Cloth Co., The, 152 Linkwood Rd., Cambridge, Md.
Cleveland Wire Cloth & Mfg. Co., 3573 East 78 St., Cleveland 5, Ohio
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Newark Wire Cloth Co., 370 Verona Ave., Newark 4, N. J.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes-Barre, Pa. ADV. PG. 229.
Tyler Co., W. S., 3615 Superior Ave., Cleveland 14, Ohio

BAST FIBER PROCESSING MACHINES (See Cordage Machines)

BATCHERS (See Winders—Cloth)

BATTERIES—*Electric Storage*

Electric Storage Battery Co., P. O. Box 8109, Philadelphia 1, Pa.
Exide—See Electric Storage Battery Co.

BATTING MACHINES (See Pickers—Cotton)

BEAKERS

American Metal Spinng. & Stampg. Co., 130 East 13th St., New York 3, N. Y.
Duro-Tex—See Reading Scientific Co.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Reading Scientific Co., 13th & Pike Sts., Reading, Pa.

BEAM BARRELS (See Barrels—Beam)

BEAM STORAGE RACKS

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.

BEAMERS (See Warpers—Beam)

BEAMS & BEAM HEADS

Adjustable ..... **A**
Dye ..... **B**
Narrow Fabric ..... **C**
Paperless Warp ..... **D**
Ribbon Loom (See Beams & Beam Heads—Narrow Fabric)
Section ..... **E**
Selvage (See Beams & Beam Heads—Narrow Fabric)
Tricot ..... **F**
Warp ..... **G**
Webbing (See Beams & Beam Heads—Narrow Fabric)

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass. ADV. PG. 193 ..... A, E, G
Bergedorfer Eisenwerk A. G., Astra-Werke Abt. Textilmaschinen, Hamburg-Bergedorf, Germany ..... G
BRIGGS-SHAFFNER CO., P. O. Box 188, Winston Salem, N. C. ..... E, F, G
ADV. PG. 214.
Burlington Engrg. Co. Inc., Graham, N. C. ..... A, F
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass ..... A, C, D, G
DRAPER CORP., Hopedale, Mass. ADV. PG. 1 ..... A, G
Greenville Belting Co., Bramlett Rd., Greenville, S. C. ..... G
Gross Corp., Erick, 64-72 West Broad St., Bergenfield, N. J. ..... D, E, F, G
Hayes Industries, Inc., Jackson, Mich. ..... A, E, F, G
Hubbard Spool Co., Second St. & County Rd., Garrett, Ind. ..... E, F, G
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ..... G
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199 ..... G
MARTIN & SONS, INC., ADOLPH, 12-16 Linden St., Passaic, N. J. ..... G
ADV. PG. 227.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ..... A
ADV. PG. 198.
McBRIDE, INC., EDWARD J., Cottman & Wissinoming St., Philadelphia 35, Pa. ..... A, C, D, F, G
ADV. PG. 84, 85.
McCASKIE, INC., WM., Forge Road, Westport, Mass. ADV. PG. 208 ..... E, G
MILTON MACHINE WORKS, INC., P. O. Box 189, Milton, Pa. ..... A, C, D, E, F, G
ADV. PG. 202.
Morton Machine Works, Columbus, Ga. ..... E, G
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass. ADV. PG. 235 ..... A, C, G
Noble Co., Roy, New Bedford, Mass. ..... E, G
Salisbury Iron Works, Salisbury, N. C. ..... A, B
Southern States Equipment Co., Hampton, Ga. ..... A, G
Specialty Hardwoods, Inc., P. O. Box 1351, Greenville, S. C. ..... F
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ..... A, C, E, G
ADV. PG. 195.
Watson Co., Inc., T. E., 576 Lawrence St., Lowell, Mass. ..... F

BEARINGS

Aluminum ..... **A**
Babbitted ..... **B**
Ball ..... **C**
Brass or Bronze ..... **D**
Needle or Quill ..... **E**
Oilless or Self-Lubricating ..... **F**
Roller ..... **G**
Sealed-Sleeve ..... **H**
Sleeve ..... **I**
Synthetic Composition ..... **J**
Thrust ..... **K**
Wood ..... **L**

Ahlberg Bearing Co., 3025 West 47th St., Chicago, Ill. ..... C, K
Aluminum Co. of America, New Kensington, Pa. ..... A
Ampco Metal Inc., 1706 South 38th St., Milwaukee 46, Wis. ..... D, I
Amplex Div., Chrysler Corp., 341 Massachusetts Ave., Detroit 31, Mich. ..... D, F, I, K

Andrews Co., 189 Charles St., Spartanburg, S. C. C, K
Arguto Oilless Bearing Co., 149 West Berkley St., Philadelphia, Pa. F, I, K, L
Ball Bushing—See Thomson Industries Inc.
Ball & Roller Bearing Co., Crosby St. & Maple Ave., Danbury, Conn. C, G, K
Bost-Bronze—See Boston Gear Wk. Inc.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass. E
Bound Brook Oilless Bearing Co., Bound Brook, N. J. D, F, I, K
Bower Roller Bearing Co., 3040 Hart Ave., Detroit 14, Mich. F
Bunting Brass & Bronze Co., 715 Spencer St., Toledo 9, Ohio D, F, I, K
Carniti & Co., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy C, G
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis. B, G
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill. B, C, D, E, F, G, K
Compo—See Bound Brook Oilless Bearing Co.
Continental Gin Co., Industrial Div., Birmingham, Ala. B, K, L

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. J
ADV. PG. 88, 89.

Dick Co., R. J., Sade St., Passaic, N. J. B, F
Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I. F, J, L
Dodge Mfg. Corp., Mishawaka, Ind. B, C, D, E, F, G, I
Dodge-Timken—See Dodge Mfg. Corp.

DRAPER CORP., Hopedale, Mass. D, F, J, L
ADV. PG. 1.

Engineered Plastics Inc., Gibsonville, N. C. J
Fafnir Bearing Co., The, New Britain, Conn. C
Federal Bearings Co., Inc., Poughkeepsie, N. Y. C, K
Gatke Corp., Industrial Dept., 246 North La Salle St., Chicago 1, Ill. F, J
Graphalloy—See Graphite Metallizing Corp.

GRAPHITE METALLIZING CORP., 1050 Nepperhan Ave., Yonkers, N. Y. E
ADV. PG. 203.

Gwilliam Co., The, 360 Furman St., Brooklyn 1, N. Y. C, G, K

HEIM CO., THE, 48 Sanford St., Fairfield, Conn. C, G
ADV. PG. 211.

Hess Bright—See SKF Industries, Inc.
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y. B
Hyatt Bearings Div., General Motors Corp., Harrison, N. J. G
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio B
Johnson Bronze Co., New Castle, Pa. B, D, F, H, I, K
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass. J

LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. B, C, G, I, K
ADV. PG. 83.

Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J. G, I
Marlin Rockwell Corp., 402 Chandler St., Jamestown, N. Y. C, G, K
McHale Company, M. J., 136 West Market St., Scranton 8, Pa. E
MPB—See Miniature Precision Bearings Co.
Miniature Precision Bearings Co., Carpenter St., Keene, N. H. C, K
Moccasin Bushing Co., 20th & Chestnut St., Chattanooga 1, Tenn. D, I, K
Morganite, Inc., 3302 48th Ave., Long Island City 1, N. Y. B, F, I, K
Morton Machine Works, Columbus, Ga. B, C
National Lead Co., 111 Broadway, New York 6, N. Y. B, D, H, I, K
National Plastics, Inc., P. O. Box 152, Knoxville 1, Tenn. E

NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn. B
ADV. PG. 105.

Nice Ball Bearing Co., 2925 Hunting Park Ave., Philadelphia 40, Pa. B
Norma-Hoffman Bearings Corp., Stamford, Conn. D, H, K
Nylined—See Thomson Industries Inc.
Oilite—See Amplex Div., Chrysler Corp.
Paramount Oilless Bearing Co., Inc., 99 Hope Ave., Worcester, Mass. F, L
Pobco—See Paramount Oilless Bearing Co., Inc.
Powdiron—See Bound Brook Oilless Bearing Co.

PRECISION GEAR AND MACHINE CO., 2001 North Tryon St., Charlotte, N. C. B
ADV. PG. 224.

Randall Graphite Bearings, Inc., Lima, Ohio D, F, I
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J. F
Rex—See Paramount Textile Machinery Co.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill. F, J
Rin-Rite—See National Plastics, Inc.
Roberts Company, P. O. Box 931, Sanford, N. C. F, L
Rollway Bearing Co., 541 Seymour St., Syracuse 4, N. Y. G, K
Rulon—See Dixon Lubricating Saddle Co.
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill. B, F, J

SARGENT'S SONS CORP., C. G., Graniteville, Mass. B
ADV. PG. 127.

Seal-Master—See Stephens-Adamson Mfg. Co.
Shafer Bearing Corp., 801 Burlington Ave., Downers Grove, Ill. F
Shenango Penn Mold Co., 1751 West Third St., Dover, Ohio D, I
SKF Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa. C, G, K
Sleevoil—See Dodge Mfg. Corp.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C. B, C, G, I, K

SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. J
ADV. PG. 103.

Split Ballbearing Corp., 211 Mechanic St., Lebanon, N. H. B

STEPHENS-ADAMSON MFG. CO., 48 Ridgeway Ave., Aurora, Ill. B
ADV. PG. 163.

Thomson Industries Inc., Manhasset, N. Y. C, F
Timken Roller Bearing Co., 1835 Dueber Ave., Canton 6, Ohio G, K
Torrington Co., The, 59 Field St., Torrington, Conn. E, G
Trinacria Specialty Mfg. Co., Norwich, Conn. D, F, L
Tyson Bearing Corp., Massillon, Ohio F
Unibal—See Heim Co.
United States Graphite Co., 1621 Holland Ave., Saginaw, Mich. F, I, J, K
Webster Manufacturing, Inc., Tiffin, Ohio A
Whitin Machine Works, Whitinsville, Mass. B, D
Wood's Sons Co., T. B., Chambersburg, Pa. B, C, D

BEAM DYEING MACHINES (See Dyeing Machines—Warp)

BECK DYEING MACHINES (See Dyeing Machines—Piece Goods or Reel)

BEES WAX (See Waxes—Natural)

BELT ACCESSORIES (Cements, Dressings, etc.)

Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Slip-Knot—See Webb Belting Co.
Webb Belting Co., 1501 W. 12 St., Kansas City 7, Mo.

BELT—*Chain* (See Chains—Conveyor & Elevator, Power Transmission)

BELT LACERS (See also Wire-Stitching Machines)

Acme Staple Co., 1643 Hadden Ave., Camden 3, N. J.
Clipper Belt Lacer Co., 974 Front Ave., N. W., Grand Rapids 2, Mich.

NATIONAL RING TRAVELER CO., P. O. Box 1028, Pawtucket, R. I. ADV. PG. 181.

TALCOTT, W. O. & M. W. INC., 91 Sabin St., R. I. ADV. PG. 252.

BELT MATCHING MACHINE—*V*

Flexoid—See Smith Power Transmission Co.
Smith Power Transmission Co., 1545 East 23 St., Cleveland 14, Ohio

BELTS—*Fabric*

Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Balata—See Dick Co., R. J.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Carlyle Rubber Co., 64 Park Pl., New York 7, N. Y.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Climax—See Fenwick Mfg. Co.
Daniels, Inc., C. R., Daniels, Md.
Dick Co., R. J., Sade St., Passaic, N. J.

DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.

Fabco—See Fabreeka Products Co.
Fabreeka Products Co., 222 Summer St., Boston, Mass.
Fenwick Mfg. Co., 134 Rome St., Newark, N. J.
Globe Woven Belting, 1400 Clinton St., Buffalo, N. Y.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Iwana—See Fenwick Mfg. Co.
Jackson—See Fenwick Mfg. Co.
Lapless-Endless—See Ton-Tex Corp.
Missouri Belting Co., 1029 South Grand Blvd., St. Louis 4, Mo.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Ton-Tex Corp., 247 Pearl St., N. W., Grand Rapids 2, Mich.
Webb Belting Co., 1501 W. 12 St., Kansas City 7, Mo.

BELTS—*Leather*

American—See Johnson Belting Co.
Ark—See Philadelphia Belting Co.
Atlanta Belting Co., 508 Whitehall St., S. W., Atlanta 3, Ga.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Axiom—See Schwartz Belting Co.
Bancroft Belting Co., 145 High St., Boston 10, Mass.
Barnes Co., Henry K., 8 Irving St., Salem, Mass.
Browning Belting & Supply Co., 216-18 North Central, Knoxville, Tenn.
Charlotte Leather Belting Co., 309 East 12th St., Charlotte, N. C.
Chicago Belting Co., 113 North Green St., Chicago, Ill.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Cocheco—See Williams & Sons, I. B.

DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.

Divio—See Schwartz Belting Co.

DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.

Drivemaster—See Schmidt Mfg. Co.
Elkide—See Webb Belting Co.
Emork—See Schwartz Belting Co.
Fisher Leather Belting Co., 325 North Third St., Philadelphia 6, Pa.
Gibraltar—See Johnson Belting Co.
Gilt Edge—See Rhoads & Sons, J. E.
Globe—See Schwartz Belting Co.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Gripotan—See Rhoads & Sons, J. E.
Heart Oak—See Graton & Knight Co.
Hirsute—See Johnson Belting Co.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Johnson Belting Co., 34-44 Hubert St., New York 13, N. Y.
Kanthurt—See Fisher Leather Belting Co.
Macoak—See McLeod Leather & Belting Co.
McLeod Leather & Belting Co., Greensboro, N. C.
Missouri Belting Co., 1029 South Grand Blvd., St. Louis 4, Mo.
Niagara—See Johnson Belting Co.
Page Belting Co., Concord, N. H.
Philadelphia Belting Co., Sixth & Spring Garden Sts., Philadelphia 23, Pa.
Pivotan—See Southern Belting Co.
Power—See Rhoads & Sons, J. E.
Purok—See Southern Belting Co.
Reliance—See Chicago Belting Co.
Research—See Graton & Knight Co.
Rhoads & Sons, J. E., 35 North Sixth St., Philadelphia 6, Pa.
Schachner Leather & Belting Co., 1124 South Mint St., Charlotte 3, N. C.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Schmidt Mfg. Co., 20 North St., Box 560, New Bedford, Mass.
Schwartz Belting Co., 115-25 Metropolitan Ave., Kew Gardens 18, N. Y.
Seaplane—See Atlanta Belting Co.
Sea Sled—See Atlanta Belting Co.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Sobeco—See Southern Belting Co.
Southern Belting Co., P. O. Box 4296, Atlanta 2, Ga.
Spartan—See Graton & Knight Co.
Stronghold—See Rhoads & Sons, J. E.
Sun-Tan—See Atlanta Belting Co.
Tannate—See Rhoads & Sons, J. E.
Textile Leather & Cement Co., 40 Andrews St., Lowell, Mass.
Ton-Tex Corp., 247 Pearl St., N. W., Grand Rapids 2, Mich.
Warren Belting Co., 33 Arctic St., Worcester 8, Mass.
Waterproof—See Fisher Leather Belting Co.
Webb Belting Co., 1501 W. 12 St., Kansas City 7, Mo.
Whitin Machine Works, Whitinsville, Mass.
Williams & Sons, I. B., Dover N. H.

BELTS—*Rubber*

Acme Rubber Mfg. Co., 1938 Lambert St., Trenton, N. J.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass.
Bull Dog—See Boston Woven Hose & Rubber Co.
Carlyle Rubber Co., 64 Park Pl., New York 7, N. Y.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood, Cincinnati 12, Ohio
Dick Co., R. J., Sade St., Passaic, N. J.

DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.

Endurance—See Hamilton Rubber Mfg. Corp.
Fidelity—See Cincinnati Rubber Mfg. Co.
Flexrite—See Hamilton Rubber Mfg. Corp.
Globe Woven Belting, 1400 Clinton St., Buffalo, N. Y.
Goodall Rubber Co., 431 Whitehead Rd., Trenton 4, N. J.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J.
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.
Ideal—See Hamilton Rubber Mfg. Corp.
King-Koal—See Hamilton Rubber Mfg. Corp.
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio
New York Belting & Packing Co., One Market St., Passaic, N. J.
Pacemaker—See Cincinnati Rubber Mfg. Co.
Page Belting Co., Concord, N. H.

Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
Red Chief Tan-Kote—See Webb Belting Co.
Schwartz Belting Co., 115-25 Metropolitan Ave., Kew Gardens 18, N. Y.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Super Service—See Hamilton Rubber Mfg. Corp.
Thermoid Corp., Whitehead Rd., Trenton 6, N. J.
Ton-Tex Corp., 247 Pearl St., N. W., Grand Rapids 2, Mich.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Webb Belting Co., 1501 W. 12 St., Kansas City 7, Mo.

BELTS—*V*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Atlantic Mfg. Co., Wilmington, Del.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass.
Brammer Corp., 684 Broadway, New York 12, N. Y.
Bull Dog—See Boston Woven Hose & Rubber Co.
Carlyle Rubber Co., 64 Park Pl., New York 7, N. Y.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio.
Dick Co., R. J., Sade St., Passaic, N. J.
Dick Ropes—See Dick Co., R. J.
Dodge Mfg. Corp., Mishawaka, Ind.
Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex.
Gates Rubber, Co., The, 999 S. Broadway, Denver 17, Colo.
Goodrich Co., The B. F., Industrial & General Products Div., Akron, Ohio
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hex-Tex—See Allis-Chalmers Mfg. Co.
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio
Manheim Mfg. & Belting Co., Manheim, Pa.
Missouri Belting Co., 1029 South Grand Blvd., St. Louis 4, Mo.
New York Belting & Packing Co., One Market St., Passaic, N. J.
Page Belting Co., Concord, N. H.
Pyott Foundry & Machine Co., 332 North Sangamon St., Chicago 7, Ill.
Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Schwartz Belting Co., 115-25 Metropolitan Ave., Kew Gardens 18, N. Y.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Sure-Grip—See Wood's Sons Co., T. B.
Taperlock—See Dodge Mfg. Corp.
Thermoid Corp., Whitehead Rd., Trenton 6, N. J.
Ton-Tex Corp., 247 Pearl St., N. W., Grand Rapids 2, Mich.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Veelos—See Manheim Mfg. & Belting Co.
Ve-e-zy—See Ton-Tex Corp.
Wood's Sons Co., T. B., Chambersburg, Pa.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

BELTS—*Woven Wire*

ASHWORTH BROS. INC., Fall River, Mass.
ADV. PG. 161.
Cambridge Wire Cloth Co., The, 152 Linkwood Rd., Cambridge, Md.

BENCHES—*Work, Stands*

AMERICAN SAFETY TABLE CO. INC., 224 Fifth Ave., New York, N. Y. ADV. PG. 162.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Clark Co., George P., Windsor Locks, Conn.
Durkee Atwood Co., Industrial Div., 215 Seventh St., N. E., Minneapolis 13, Minn.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Lyon Metal Products Inc., 935 Madison Ave., Aurora, Ill.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Standard Pressed Steel Co., Box 571, Jenkintown, Pa.

BENTONITE

Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y.

BENZENE (*Benzol*)

Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.

BETANAPHTOL (See Developers)

BETANAPHTHYLAMINE (See Developers)

BETAOXYNAPHTHOLIC ACID (See Developers)

BICARBONATE OF SODA (See Sodium—Salts of—Bicarbonate)

BICHLORIDE OF TIN (See Tin—Salts of—Chloride)

BICHROMATE OF POTASH (See Potassium—Salts of—Bichromate)

BICHROMATE OF SODA (See Sodium—Salts of—Bichromate)

BINDERS—*Chemical*

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
National Starch Products, Inc., 270 Madison Ave., New York, N. Y.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Testworth Laboratories, Inc., 407 South Dearborn St., Chicago 5, Ill.

BINDERS—*Loom*

Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Fisher Leather Belting Co., 325 North Third St., Philadelphia 6, Pa.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hardwood Mfg. Co., Inc., P. O. Box 929, Greenville, S. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Noble Co., Roy, New Bedford, Mass.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Truche Leather Co., Peabody, Mass.
Tru-le-co—See Truche Leather Co.

BINS—*Steel* (See Shelves—Steel, Bins & Racks)

BLADES (See also Doctor Blades)

Corduroy Cutting ..... **A**
Staple Cutting ..... **B**

Firsching & Son, Inc., J. A., 421 Broad St., Uttica, N. Y. ..... A
Muller, Franz, M. Gladbach, Germany. Represented by: Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. ..... A
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio ..... A
Whitin Machine Works, Whitinsville, Mass. ..... B

BLANKETS—*Endless*

Aetna Felt Co., 204 Centre St., New York 13, N. Y.
Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Mertecleft Corp., P. O. Box 688, Englewood, N. J.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

BLANKETS—*Palmer* (See Blankets—Endless)

BLANKETS—*Printing* (See Blankets—Endless)

BLANKETS—*Sanforized* (See Blankets—Endless)

BLANKETS—*Steaming*

Aetna Felt Co., 204 Centre St., New York 13, N. Y.
Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Burlington Engrg. Co. Inc., Graham, N. C.
Mertecfelt Corp., P. O. Box 688, Englewood, N. J.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

BLEACHER'S BLUE (See Bluing)

BLEACHES

Bleaching Assistants ..... **A**
Bleaching Oils ..... **B**

ANTARA CHEMICALS DIV. GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ..... A
ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y. ..... A
BECCO SALES CORP., River Road & Sawyer St., Buffalo, N. Y. ..... A, B
ADV. PG. 265.
Bryant Chemical Corp., 6 North St., North Quincy, Mass. ..... A, B
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa. ..... A
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. ..... A
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. ..... A
Dexter Chemical Corp., 819 Edgewater Rd., New York 59 N. Y. ..... A, B
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemical Div., Organic Chemicals Dept., Wilmington, Del. ..... A
ADV. PG. 258, 259.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del. ..... A, B
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. ..... A
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa. ..... A
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y. ..... A
Geigy Co., Inc., 89 Barclay St., New York, N. Y. ..... A
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y. ..... A
ADV. PG. 267.
Hart Products Corp., 1440 Broadway, New York 18, N. Y. ..... A, B
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y. ..... A
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ..... A, B
ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill. ..... A
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ..... A, B
ADV. PG. 2.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. ..... A
MONA INDUSTRIES, 65-72 E. 23rd St., Paterson 4, N. J. ..... A
ADV. PG. 284.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. ..... A
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. ..... A, B
Nopco Chemical Co., First & Essex Sts., Harrison, N. J ..... A, B
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J. ..... A
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. ..... A
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. ..... A
ADV. PG. 284.
PROCTOR & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio ..... A
ADV. PG. 276.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa. ..... A
Scher Bros., 519 Getty Ave., Clifton, N. J. ..... A
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa. ..... B
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga. ..... A, B
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ..... A
ADV. PG. 274.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ..... A, B
ADV. PG. 282.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J. ..... A
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ..... A
ADV. PG. 287.

BLEACHING AGENTS (See under individual headings: Calcium—Salts of—Hypochlorite, Hydrogen Peroxide, etc.)

BLEACHING MACHINES

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
FARMER NORTON & CO. LTD., SIR JAMES, Manchester, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
Fleet Line—See Riggs & Lombard, Inc.
Gaston County Dyeing Mach. Co., Stanley, N. C.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia, Pa. ADV. PG. 140.
Krantz, H., Aachen, Germany—Represented by: Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Thies, B., Coesfeld/Westf., Germany
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

BLEACHING POWDER (See Calcium—Salts of—Hypochlorite)

BLEACHING SERVICE (See Commission Services)

BLEACHING STEAMERS

PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.

BLENDERS—*Stock* (See Blenders—Fiber)

BLENDERS—*Fiber*

BENOIT CO., O. A., 34 Salem St., Lawrence, Mass. ADV. PG. 242.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Custom Scientific Instruments Inc., 541-543 Devon St., Arlington, N. J.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Schlumberger & Cie, Guebwiller, France—Repersented by: Texplant Corp., 65 Bedford St., Stamford, Conn.
Temco Blender—See Tetxile Equipment Corp.
Truslow—See Curtis & Marble Machine Co.
Whitin Machine Works, Whitinsville, Mass.

BLENDING SERVICE (See Commission Services)

BLOCKING MACHINES

HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.

BLOCKS—*Glass*

Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.
PC—See Pittsburgh Corning Corp.
Skytrol—See Pittsburgh Corning Corp.

BLOCKS—*Hanger & Pillow*

Ahlberg Bearing Co., 3025 West 47th St., Chicago, Ill.
Boston Gear Wks. Inc., 14 Hayward St., North Quincy 71, Mass.
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Continental Gin Co., Industrial Div., Birmingham, Ala.
Dodge Mfg. Corp., Mishawaka, Ind.
Fairfield Eng. Co., **Marion, Ohio**
Hewitt, Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.
LINK BELT CO., 307 North Michigan Ave., **Chicago 1,** Ill. ADV. PG. 83.
Palmer-Bee Co., Westminster & G. T. R. R., Detroit 2, Mich.
Randall Graphite Bearings, Inc., Lima, Ohio
Rex—See Paramount Textile Machinery Co.
S K F Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa.
Standard Pressed Steel Co., Box 571, Jenkintown, Pa.
STEPHENS-ADAMSON MFG. CO., 48 Ridgeway Ave., Aurora, Ill. ADV. PG. 163.
United Iron Works Co., Pittsburg, Kan.
Whitin Machine Works, Whitinsville, Mass.
Wood's Sons Co., T. B., Chambersburg, Pa.

BLOWERS (See Fans)

BLUESTONE (See Copper Sulfate)

BLUING

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.

BOARDERS—*Hosiery* (See Hosiery Drying Forms)

BOARDING MACHINES (See Hosiery Boarding & Preboarding Machines)

BOARDS—*Bobbin* (See Boards—Pin)

BOARDS—*Bottom*

Heckman Co., J. F., 42 Weybosset St., Providence 3, R. I.

BOARDS—*Clearer*

LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Roberts Company, P. O. Box 931, Sanford, N. C.
Noble Co., Roy, New Bedford, Mass.
Whitin Machine Works, Whitinsville, Mass.

BOARDS—*Cloth*

American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.

BOARDS—*Comber*

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.

BOARDS—*Pin*

Abbott Machine Co. Inc., Wilton, N. H.
BRIGGS-SHAFFNER CO., P. O. Box 188, Winston-Salem, N. C. ADV. PG. 214.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C. ADV. PG. 248.
Noble Co., Roy, New Bedford, Mass.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes Barre, Pa. ADV. PG. 229.

BOARDS—*Quill* (See Boards—Pin)

BOARDS—*Roving* (See Boards—Pin)

BOARDS—*Thread*

Meadows Mfg. Co., Murphy & Astor Aves., S.W., Atlanta, Ga.

BOBBIN-REPAIR MACHINES

Nash Company, J. M., 2365 North 30th St., Milwaukee 10, Wis.

BOBBIN-STRIPPING MACHINES

Production Engineers Co., 306 Stuart St., Boston 16, Mass.
TERRELL MACHINE CO., INC., THE, 3000 South Boulevard, P. O. Box 928, Charlotte 1, N. C. ADV. PG. 171.

BOBBINS—(See also Spools, also Tubes)

Bottle, Paper ..... **A**
Bottle, Wood ..... **B**
Braider ..... **C**
Card Room ..... **D**
Fiber & Plastic ..... **E**
Filling, Wood ..... **F**
Flat ..... **G**
Metal ..... **H**
Spinning ..... **I**
Steaming ..... **J**
Synthetic Composition ..... **K**
Throwing ..... **L**

Acrometal Products, Inc. Div., U. S. Bobbin & Shuttle Co., 616 North Fifth St., Minneapolis 1, Minn. H, I, J, K
Acropak—See Acrometal Products, Inc., Div. U. S. Bobbin & Shuttle Co.
Akron Spool & Mfg. Co., Stow-Talmadge Rd., Cuyahoga Falls, Ohio ..... E, H, I, J, L
ALLENTOWN BOBBIN WKS, INC., 417 North 14th St., Allentown, Pa. ..... B, E, H, I, J, K, L ADV. PG. 164.
Aluminum Goods Mfg. Co., Manitowoc, Wis. ..... I, J, K
AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ..... B, C, D, F, G, I, J, L ADV. PG. 176.
AMERICAN PAPER TUBE CO., Box 430, Woonsocket, R. I. ..... F, I, J, K, L ADV. PG. 252.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I. C
Banton Bros., Inc., Newport, Me. C
BOWEN-HUNTER BOBBIN CO. INC., East Corinth, Vt. ..... D, F, I ADV. PG. 178.
Clover Leaf-Freeland Corp., Pine & Green Sts., Hazleton, Pa. ..... E, H, I, J, K, L
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ..... E ADV. PG. 88, 89.
Decorated Metal Mfg. Co. Inc., 40 Washington Ave., Milltown, N. J. ..... E, H, I, J, K, L
Dixon, John & Sons, England—Represented by Atkinson Haserick & Co., 211 Congress St., Boston (6), Mass. ..... F, I, J
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ..... D, E, I ADV. PG. 169.
DRAPER CORP., Hopedale, Mass. ..... E, F, K ADV. PG. 1.
Duroweld—See Sonoco Products Co.
Engineered Plastics Inc., Gibsonville, N. C. ..... E, J, K, L
Formica Co., 4614 Spring Grove Ave., Cincinnati, Ohio ..... I, J, L
Glen Bobbin Co., South Hiram, Me. ..... B, D, F, J, I
Gyrotex—See Formica Co.
H & P Spool & Bobbin Co., 158 Canal St., Lawrence, Mass. ..... B, C, D, E, F, I, L
Hartson Co., The, L. M., North Windham, Conn. ..... B, E, I, L
Hayes Industries, Inc., Jackson, Mich. ..... H, I
Heckman Co., J. F., 42 Weybosset St., Providence 3, R. I. C
Hubbard Spool Co., Second St. & County Rd., Garrett, Ind. ..... B, H, I, J, L
Industrie-Werke Karlsruhe, Karlsruhe, Germany ..... H
Larson Tool & Stamp. Co., Attleboro, Mass. ..... H
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ..... L ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LESTERSHIRE SPOOL & MFG. CO., DIV. OF NATIONAL VULCANIZED FIBRE CO., 140 Baldwin St., Johnson City, N. Y. ..... E, F, J, L ADV. PG. 191.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186 ..... D, F, I
Mark—See Allentown Bobbin Wks. Inc.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass. ..... C ADV. PG. 235.
New England Bobbin & Shuttle Co., 31 Crown St., Nashua, N. H. ..... F, I
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I. ..... A, E, I, L
PARKS & CO., M. H., 30 Brown St., Winchendon, Mass. ADV. PG. 212 I
PAVIA SHUTTLE CO., THE, 415-419 Auburn St., Allentown, Pa. ..... F, L ADV. PG. 200.
Pennsylvania Spool & Equipment Co., 530 North Fulton St., Allentown, Pa. ..... E, I, J, K, L
Plasti-Weld—See American Paper Tube Co.
Precision—See New England Bobbin & Shuttle Co.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill. ..... E, I, J, K, L
St. Regis Paper Co., Panelyte Div., 230 Park Ave., New York, N. Y. ..... E

Scaglia, Italy, Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. H, I
SONOCO PRODUCTS CO., Hartville, S. C. I
ADV. PG. 175.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C. K
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. E, I, J, K, L
ADV. PG. 103.
Synthane Corp., Textile Div., Oaks, Pa. E, J, I
Trinacria Specialty Mfg. Co., Norwich, Conn. C, L
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. B, C, D, F, I, K, L
ADV. PG. 195.
Werbohl, Germany Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. F

BOILER FEED UNITS

Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.

BOILERS—*Steam*

Ames Iron Works, Inc., 25 East Second St., Oswego, N.Y.
Amesteam Generator—See Ames Iron Works, Inc.
B & W—See Babcock & Wilcox Co.
BABCOCK & WILCOX CO., 161 East 42 St., New York, N. Y. ADV. PG. 221.
Bigelow Co., 72 River St., New Haven 3, Conn.
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill.
Cleaver-Brooks Co., 326 Keefe Ave., Milwaukee 12, Wis.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga. ADV. PG. 109.
Comm-o-Lectric—See Commonwealth Electric & Mfg. Co.
Commonwealth Electric & Mfg. Co., 83-105 Boston St., Boston 25, Mass.
Cottage—See Kewanee-Ross Corp.
Economaster—See Hapman-Dutton Co.
Economist—See Hapman-Dutton Co.
Economizer—See Hapman-Dutton Co.
Econotherm—See Hapman-Dutton Co.
Erie City Iron Works, 1422 East Ave., Erie, Pa.
Finnigan Co. Inc., J. J., 455 Means St., N. W., Atlanta, Ga.
Fitzgibbons Boiler Company, Inc., 101 Park Ave., New York 17, N. Y.
Foster Wheeler Corp., 165 Broadway, New York, N. Y.
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich.
Kane—See Mears-Kane-Ofeldt, Inc.
Keeler Co., E., 238 West St., Williamsport, Pa.
Kewanee-Ross Corp., 1407 West Ave., Buffalo 13, N. Y.
Keystone—See Erie City Iron Works
Leffel & So., The, James, 426 East St., Springfield, Ohio
Livingstone Engineering Co., 100 Grove St., Worcester, Mass.
Lucy Boiler & Mfg. Corp., 1514 Chestnut St., Chattanooga 2, Tenn.
Mears-Kane-Ofeldt, Inc., Bridgeport, Pa.
MKayo—See Mears-Kane-Ofeldt, Inc.
Murray Iron Works Co., 1106 Washington St., Burlington, Iowa
Orr & Sombower, Inc., Morgantown Rd., Reading, Pa.
Powermaster—See Orr & Sombower, Inc.
Riley Stoker Corp., 9 Neponset St., Worcester, Mass.
Scottie, Jr.—See Kewanee-Ross Corp.
Speedylectric—See Livingstone Engineering Co.
Springfield Boiler Co., 1901 East Capitol Ave., Springfield, Ill.
Square-Heat—See Kewanee-Ross Corp.
Stirling—See Babcock & Wilcox Co.
Stone Boiler Equipment Corp., 186 Power St., Brooklyn, N. Y.
Superior Combustion Industries, Inc., Times Tower, Times Square, New York 18, N. Y.
Tabasco—See Kewanee-Ross Corp.
Union Iron Works, 15 & Cascade Sts., Erie, Pa.
United States Radiator Corp., Cyclotherm Div., Oswego, N. Y.

BOIL-OFF MACHINES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
Atlantic Tank Corp., 1207 Tonelle Ave., North Bergen, N. J.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Burlington Engrg. Co. Inc., Graham, N. C.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Fleet Line—See Riggs & Lombard, Inc.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia, Pa. ADV. PG. 140.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

BOIL-OFF OILS (See Lubricants—Fiber Process)

BOLSTERS—*Spinning & Twister*

Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
McKelvie Machine Co., 832-834 North Marlette St., Gastonia, N. C.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
S K F Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa.
Smith & Son, E. E., Gastonia, N. C.
Superior Bolster Co., Inc., Gastonia, N. C.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Warren Belting Co., 33 Arctic St., Worcester 8, Mass.
Whitin Machine Works, Whitinsville, Mass.

BOOSTERS—*Gas* (See Pumps—Gas)

BOOSTERS—*Vacuum* (See Pumps—Vacuum)

BORAX (See Sodium—Salts of—Borate)

BORIC ACID (See Acids)

BOSS ROLLS (See Rolls—Drawing, Roving and Spinning)

BOTTLES (See Stoneware—Acidproof)

BOW-CONTROL MACHINES

WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

BOX-STRAPPING MACHINE

Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.
Gerrard & Co., A. J., 1950 Hawthorne Ave., Melrose Park, Ill.
Stanley Works, The, 195 Lake St., New Britain, Conn.

BRAID (See Webbing & Braid—Elastic)

BRAIDERS

Nebuttco—See New England Butt Co.
New England Butt Co., 304 Pearl St., Providence 7, R. I.
Wardwelle Braiding Machine Co., Central Falls, R. I.

BOX LOOMS (See Looms under specific headings according to use)

BOXES—*Boiling-Out* (See Boil-Off Machines)

BOXES—*Canvas* (See Baskets—Canvas)

BOXES—*Comb* (See Comb Boxes)

BOXES—*Corrugated Shipping* (See Cartons—Corrugated Fiber)

BOXES—*Dye* (See Dyeing Machines)

BOXES—*Fiber and Wood*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Convoy, Inc., 3424 Navarre Rd., S.W., Canton, Ohio
Dade Brothers, Claremont Terminal, Jersey City, N. J.
EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.
ADV. PG. 248.
Federal Fibre Corp., 3704 Tenth St., Long Island City, N. Y.
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. ADV. PG. 219.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
GAYLORD CONTAINER CORP., 111 North Fourth St., St. Louis 2, Mo. ADV. PG. 240.
Hinde & Dauch Paper Co., 407 Decatur St., Sandusky, Ohio
Kennett—See Fibre Specialty Mfg. Co.
Lewis Co., G. B., 426 Montgomery St., Watertown, Wis.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.

BOXES—*Gill* (See Gill Boxes)

BOXES—*Humidifying* (See Cabinets—Humidifying)

BOXES—*Size*

Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
West Point Foundry & Machine Co., West Point, Ga.

BOXES—*Starting* (See Controls—Automatic & Manual Motor)

BOXES—*Steamer*

American Sterilizer Co., Erie, Pa.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Malow Sheet Meta l& Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.

BOXES—*Stuffing* (See Joints—Revolving)

BOXES—*Suction* (See Extractors—Vacuum)

BOXES—*Tote*

Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Clark Co., George P., Windsor Locks, Conn.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Convoy, Inc., 3424 Navarre Rd., S.W., Canton, Ohio
Fedco—See Federal Fibre Corp.
Federal Fibre Corp., 3704 Tenth St., Long Island City, N. Y.
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. ADV. PG. 219.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
GLADWIN PLASTICS CO., 275 Houston St., N.E., Atlanta, Ga. ADV. PG. 250.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Iron Bound Box & Lbr. Co., Hoffman Place, Hillside, N. J
Kennett—See Fibre Specialty Mfg. Co.
Lewis Co., G. B., 426 Montgomery St., Watertown, Wis.
Lyon Metal Products Inc., 935 Madison Ave., Aurora, Ill.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Van Range Co., The John, Fifth & Butler Sts., Cincinnati 2, Ohio

BRAKE LININGS

Gatke Corp., Industrial Dept., 246 North La Salle St., Chicago 1, Ill.

BRAKES—*Electric*

Clark Mfg. Co., The, 1830 East 36th St., Cleveland 14, Ohio
Electric Controller & Mfg. Co., 2701 East 79th St., Cleveland 4, Ohio
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.

Trombetta Solenoid Corp., 329 North Milwaukee St., Milwaukee 2, Wis.
Warner Electric Brake & Clutch Co., 449 Gardner, S., Beloit, Wis.

BRAKES—*Magnetic*

High-Duty—See Stearns Magnetic, Inc.
Stearns Magnetic, Inc., 646 South 28th St., Milwaukee 46, Wis.

BRAKES—*Spindle*

Carniti & C. A., Officine Fonderle Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Hartford Mach. Screw Co., P. O. Box 1440, Hartford, Conn.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Whitin Machine Works, Whitinsville, Mass.

BRAZIL WAX (See Waxes—Natural)

BREASTS—*Card & Garnett*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.
Societe Alsacienne de Contsructions, Mecaniques, Mulhouse, France. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

BRITISH GUM (See Gums)

BRONZE BARS

Bunting Brass & Bronze Co., 715 Spencer St., Toledo 9, Ohio

BROOMS (See Brushes—Industrial Cleaning Brushes, Brooms & Mops)

BRUSHING MACHINES

AFFUTEX, Copenhagen, Denmark, Repr. by Edda International, 468 4th Ave., New York 16, N. Y. ADV. PG. 92
Ainslie Knitting Machine Co., 740 Grand St., Brooklyn 11, N. Y.
ALLIED ENGINEERS OF LOWELL, 56 Race St., Lowell, Mass. ADV. PG. 212.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
McCreary Machine Works, Inc., Cohoes, N. Y.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

BRUSHES—*Cloth-Brushing Machine* (See Brushes—Machinery)

BRUSHES—*Dabbing*

American Woolen Co., Inc., Hardy Brush Factory, 16 Haverhill St., Shawsheen Village, Andover, Mass.
Elmwood Brush Co., 20 John St., Hartford 6, Conn.
Felton & Son Co., S. A., Manchester, N. H.
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
Kiefer, Walter G., 62-64 Depot St., Verona, N. J.
MASON BRUSH WORKS, 34 Austin St., Worcester, Mass. ADV. PG. 242.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Thum, Charles D., 128 West Master St., Philadelphia, Pa.

BRUSHES—*Hand* (See Brushes—Industrial Cleaning Brushes, Brooms & Mops)

BRUSHES—*Industrial Cleaning Brushes, Brooms & Mops*

American Woolen Co., Inc., Hardy Brush Factory, 16 Haverhill St., Shawsheen Village, Andover, Mass.
Atlanta Brush Co., 320 Tanner St., S. E., Atlanta, Ga.
Brown Daisy—see Chronley Mfg. Co., J. F.
Chronley Mfg. Co., J. F., 63-67 State St., Providence 1, R. I.
Elmwood Brush Co., 20 John St., Hartford 6, Conn.
Felton & Son Co., S. A., Manchester, N. H.
Fuller Brush Co., Industrial Div., 3594 Main St., Hartford 2, Conn.
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
Howell Industrial Truck Co., 8811 Maywood Ave., Cleveland 2, Ohio
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
Kiefer, Walter G., 62-64 Depot St., Verona, N. J.
Lifewood—see Jenkins Sons, Inc., M. W.
MASON BRUSH WORKS, 34 Austin St., Worcester, Mass. ADV. PG. 242.
Puritan Chemical Co., 916 Ashby St., N. W., Atlanta, Ga.
Schaefer Brush Co., 117 West Walker St., Milwaukee 4, Wis.
Selig Co., The, 336-350 Marietta, N. W., Atlanta, Ga.
Spiral Brushes, Inc., 3114 East 91 St., Cleveland 4, Ohio
Tennant Co., G. H., 2586 North Second St., Minneapolis 11, Minn.
Thum, Charles D., 128 West Master St., Philadelphia, Pa.

BRUSHES—*Machine Processing*

American Woolen Co., Inc., Hardy Brush Factory, 16 Haverhill St., Shawsheen Village, Andover, Mass.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
Atlanta Brush Co., 320 Tanner St., S. E., Atlanta, Ga.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Elmwood Brush Co., 20 John St., Hartford 6, Conn.
Felton & Son Co., S. A., Manchester, N. H.
Fuller Brush Co., The, 3594 Main St., Hartford 2, Conn.
Fullergript—See Fuller Brush Co., The
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
Howell Industrial Truck Co., 8811 Maywood Ave., Cleveland 2, Ohio
Indusco—See Industrial Brush Co.
INDUSTRIAL BRUSH CO., 24 Woodside Ave., Little Falls, N. J. ADV. PG. 207.
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
Kiefer, W. G., 62-64 Depot St., Verona, N. J.
MASON BRUSH WORKS, 34 Austin St., Worcester, Mass. ADV. PG. 242.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Metlkor—See Jenkins Sons, Inc., M. W.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Re-Fil-It—See Howell Industrial Truck Co.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Schaefer Brush Co., 117 West Walker St., Milwaukee 4, Wis.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Spiral Brushes, Inc., 3114 East 91 St., Cleveland 4, Ohio
Thum, Charles D., 128 West Master St., Philadelphia, Pa.
Whitin Machine Works, Whitinsville, Mass.

BRUSHES—*Steaming Machine* (See Brushes—Machinery)

BRUSHES—*Thread Dresser* (See Brushes—Machinery)

BUCKETS & DIPPERS—*Corrosion-Resistant*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
American Hard Rubber Co., 93 Worth St., New York 13, N. Y.
American Metal Spinng. & Stampg. Co., 130 East 13th St., New York 3, N. Y.
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Brighton Copper Wks. Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Burlington Engrg. Co. Inc., Graham, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Duro-Tex—See Reading Scientific Co.
General Scientific Equip. Co., 2760 West Huntingdon St., Philadelphia, Pa.
Luzerne Rubber Co., Mulrhead & Dewey Sts., Trenton 7, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Orange Roller Bearing Co., Metalsmiths Div., 557 Main St., Orange, N. J.
Reading Scientific Co., 13th & Pike Sts., Reading, Pa.
U. S. Stoneware Co., The, Akron 9, Ohio

BUFFERS—*Cork Cot*

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185.

BUMPERS—*Loom & Picker* (See Straps—Loom)

BUNCH BUILDERS

DRAPER CORP., Hopedale, Mass. ADV. PG. 1.

BUNDLE-TYING MACHINES (See Tying Machines—Bundle)

BURLING & DESPECKING MACHINES

PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

BURNERS—*Infrared* (See Dryers—Infrared)

BURNERS—*Oil & Gas* (See Direct-Fired Conversion Units)

BURR-CRUSHING MACHINES

Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

BUSHINGS

Bobbin ..... **A**
Bronze ..... **B**
Fiber ..... **C**
Self-Lubricating ..... **D**
Synthetic-Composition ..... **E**

Ampco Metal Inc., 1706 South 38th St., Milwaukee 46, Wis. ..... B
Amplex Mfg. Co., 6501 Harper Ave., Detroit 31, Mich. ..... D
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ..... E
ADV. PG. 185.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn. ..... C, E
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass. ..... B, D
Bound Brook Oilless Bearing Co., Bound Brook, N. J. ..... B, D
Bunting Brass & Bronze Co., 715 Spencer St., Toledo 9, Ohio ..... B, D
Amplex Div., Chrysler Corp., 341 Massachusetts Ave., Detroit 31, Mich. ..... B, D
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ..... E
ADV. PG. 88, 89 ..... C, E

Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I. D, E
DRAPER CORP., Hopedale, Mass. B, C
ADV. PG. 1.
Engineered Plastics Inc., Gibsonville, N. C. C, E
League Mfg. Co., G. F., Box 125, Greenville, S. C. D
General Electric Co., Carboloy Dept., Box 237-Roosevelt Park, P. O., Detroit, Mich. E
GLADWIN PLASTICS CO., 275 Houston St., N. E., Atlanta, Ga. E
ADV. PG. 250.
GRAPHITE METALLIZING CORP., 1050 Nepperhan Ave., Yonkers, N. Y. D
ADV. PG. 203.
Greenville Belting Co., Bramlett Rd., Greenville, S. C. C, D, E
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J. E
Johnson Bronze Co., New Castle, Pa. B, D
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass. C, D, E
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. D
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Lubrik—See Pittsburgh Brass Mfg. Co.
Miles Co., Franklin S., 2427 North Mascher St., Philadelphia 33, Pa. A, B
Mocassin Bushing Co., 20th & Chestnut St., Chattanooga 1, Tenn. B
National Lead Co., 111 Broadway, New York 6, N. Y. B
Noble Co., Roy, New Bedford, Mass. D
Oilite—See Amplex Div., Chrysler Corp.
PAGE-MADDEN CO., INC., 76-96 Second St., Mineola, N. Y. E
ADV. PG. 78 ,79.
Pittsburgh Brass Mfg. Co., 3155 Penn Ave., Pittsburgh, Pa. B, D
PLATT BROS. & CO., LTD., Aldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. B, D
ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. B, D
ADV. PG. 119.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill. D, E
St Regis Paper Co., Panelyte Div., 230 Park Ave., New York, N. Y. E
Shenango Penn Mold Co., 1751 West Third St., Dover, Ohio B
Smith & Son, E. E., Gastonia, N. C. D
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. B, D
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. C, E
ADV. PG. 103.
Trinacria Specialty Mfg. Co., Norwich, Conn. A, B, C, D, E
National Carbon Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. D
Whitin Machine Works, Whitinsville, Mass. B

BUTANOL (See Solvents)

BUTTON BREAKERS

Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

BUTYL ACETATE (See Solvents)

BUTYL ALCOHOL

Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Eastman Chemical Products, Inc., Kingsport, Tenn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
U. S. Industrial Chemicals Co., 120 Broadway, New York 5, N. Y.

CABINETS—*Aspirating*

JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.

CABINETS—*Conditioning* (See Ovens—Conditioning)

CABINETS—*Dye Testing*

Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Van Range Co., The John, Fifth & Butler Sts., Cincinnati 2, Ohio

CABINETS—*Humidifying*

American Sterilizer Co., Erie, Pa.
BACKUS MACHINE WORKS, Rt. 17 & Berry Ave., Carlstadt, N. J. ADV. PG. 226.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.

CABINETS—*Storage* (See Lockers—Storage & Clothes Lockers & Cabinets)

CAFETERIA EQUIPMENT

Aer-Void—See Vacuum Can Co.
SLATER SYSTEM, INC., Lombard at 25 St., Philadelphia 46, Pa. ADV. PG. 298.
Vacuum Can Co., 19 South Hoyne Ave., Chicago 12, Ill.

CALCIUM—*Salts of*

Actate ..... **A**
Carbonate ..... **B**
Chloride ..... **C**
Hypochlorite ..... **D**
Oxide (Lime) ..... **E**
Phosphates ..... **F**
Sulfate (Gypsum) ..... **G**

American Agricultural Chemical Co., 50 Church St., New York 7, N. Y. F
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa. B, D
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y. C
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio B
Dow Chemical Co., Midland, Mich. C
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, B, C, D, E, F, G
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. B
GENERAL CHEMICAL DIV. ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. A, C
ADV. PG. 267.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. A, B, C, D, E, F, G
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. D
ADV. PG. 2.
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo. F
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. F
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. C, D, E
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. D
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. C
ADV. PG. 274.
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. F
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. B, C
ADV. PG. 262, 263.

CALENDAR ROLLS (See Rolls—Calendar)

CALENDARS

Chasing ..... **A**
Circular & Flat Knit ..... **B**
Embossing ..... **C**
Friction ..... **D**
Rolling ..... **F**
Schreiner ..... **F**
Silk ..... **G**

APPLETON MACHINE CO., 618 South Oneida, Appleton, Wis. A, C, D, E, F, G
ADV. PG. 126.
Black-Clawson Co., The, Dilts Machine Works Div., Fulton, N. Y. C
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. A, ADV. PG. 120, 121 C, D, E, F, G
Cavagnaro, John J., Fifth & Essex Sts., Harrison, N. J. C, D, F
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. E
ADV. PG. 96.
CURTIS & MARBLE MACH. CO., 72 Cambridge St., Worcester 3, Mass. E
ADV. PG. 122, 123.
FARMER NORTON & CO. LTD., SIR JAMES, Manchester, England, Repr. by R. J. Dealy & Sons, Boston, Mass. A, B, C, D, E, F, G
ADV. PG. 162.
Hinnekens Machine Co., Inc., 201 Godwin Ave., Paterson 1, N. J. C, D, G
INDUSTRIAL OVENS INC., 13825 Triskett Road, Cleveland 11, Ohio. ADV. PG. 154. C, E
Kastrinsky Machine Co., Inc., 651 Utica Ave., Brooklyn 3, N. Y. B
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. A, C, D
ADV. PG. 198.
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. A, C, D, E, F
ADV. PG. 130, 131.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J. C, E, G
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y. B
PARKS & WOOLSON MACHINE CO., Springfield, Vt. E
ADV. PG. 192.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass. A, C, D, E, F, G
Ramisch & Co. G.m.b.h., Dr. Krefeld, Germany, Repr. by: Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. A, C, D, E, F
Tube-Tex—See Tubular Textile Machinery Corp.
TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. E
ADV. PG. 145.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. B
ADV. PG. 238.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J. C, D, E, F, G
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J. C, D, E, F, G
Werner Machine Co., 183 Autumn St., Passaic, N. J. C, D, E, F, G

CAMS

EISLER ENGINEERING CO., INC., 750 South 13th St., Newark 3, N. J. ADV. PG. 238.
PRECISION GEAR AND MACHINE CO., 2001 North Tryon St., Charlotte, N. C. ADV. PG. 224.

CANDELILLA WAX (See Waxes—Natural)

CANS

Batch ..... **A**
Drying ..... **B**
Gasoline ..... **C**
Oil ..... **D**
Roving (See Sliver)
Sliver ..... **E**
Safety ..... **F**

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill. A, B
American Brass Co., The, Waterbury 88, Conn. B
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J. A, B
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C. B
Bristol Metal Products Corp., Box 616, Bristol, Tenn. A, B
Burlington Engrg. Co., Inc., Graham, N. C. A, B
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. B
ADV. PG. 120, 121.
CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. B
ADV. PG. 232.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. B
ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. B
ADV. PG. 96.
Continental Can Co., 100 East 42 St., New York 17, N. Y. C, D
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. E
ADV. PG. 88, 89.
Duro-Tex—See Reading Scientific Co.
Eagle Mfg. Co., Wellsburg, W. Va. C, D, F
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. E
ADV. PG. 219.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa. F
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J. A, B
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. B
ADV. PG. 86, 87.
Kaye & Sons Ltd., Joseph, Leeds, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston (6), Mass. D
Kennett—See Fibre Specialty Mfg. Co.
Lummus Cotton Gin Co., Columbus, Ga. B
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J. A, B
Metal Products Corp., 52 West 19th St., Weehawken, N. J. A, B, F
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J. B
Orange Roller Bearing Co., Metalsmiths Div., 560 White St., Orange, N. J. A
Norton Ltd., S., Oldham, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston (6), Mass. E
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass. B
Reading Scientific Co., 13th & Pike Sts., Reading, Pa. A

SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ..... E
ADV. PG. 103.
TEXTILE MACHINERY, INC., DIV. PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ..... A
ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ..... B
ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ..... B
ADV. PG. 134, 135.
Trinacria Specialty Mfg. Co., Norwich, Conn. E
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ..... B
ADV. PG. 148.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J. B
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J. A, B
Werner Machine Co., 183 Autumn St., Passaic, N. J. B
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ..... B
ADV. PG. 155.

CAP SPINNING FRAMES (See Spinning Frames—Worsted)

CARBOLIC ACID (See Acids)

CARBON—*Salts of*

Bisulfide ..... A
Tetrachloride ..... B

Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio B
Dow Chemical Co., Midland, Mich. B
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. B
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo. B
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. B
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. B
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. B
ADV. PG. 274.
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. ..... A, B

CARBONIZERS—*Piece Goods*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Fleet Line—See Riggs & Lombard, Inc.
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
HUNT MACHINERY CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.

CARBONIZERS—*Raw Stock*

Hunter Mach. Co., James, North Adams, Mass.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.
ADV. PG. 127.

CARBONIZING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn.
Carbide & Carbon Chemicals Co., Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y.
ADV. PG. 267.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 287.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

CARD CLOTHING

Metallic ..... A
Wire ..... B

ASHWORTH BROS. INC., Fall River, Mass. ..... A, B
ADV. PG. 161.
BOOTH CO., BENJAMIN, Allegheny Ave. & Janney St., Philadelphia 34, Pa. ..... B
ADV. PG. 107.
Charlotte Mfg. Co., 1300 South Mint St., Charlotte 1, N. C. B
CRITCHLEY, SHARP, & TETLOW LTD., Cleckheaton, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass ..... A, B
ADV. PG. 162.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ..... A, B
ADV. PG. 172.
Hetherington & Sons, Inc., John, Gastonia, N. C. B
HOWARD BROS. MFG. CO., 44 Vine St., Worcester, Mass. ..... A, B
ADV. PG. 95.
Merrimack Card Clothing Co., Andover, Mass. B
Mertecfelt Corp., P. O. Box 688, Englewood, N. J. A, B
Methuen Card & Napper Clothing Co., 2228 Buena Vista Rd., Columbus, Ga. B
Platt Freres S. A. R. L., 108 Boulevard De Lyon, Roubaix, France A
Platt Limited, J. W. & H., Byron Works, Bouverie Rd., Harrow, Middlesex, England A
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ..... A
ADV. PG. 115.
Redman Card Clothing Co., Red Spring Rd., Andover, Mass. B
Standard Card Clothing Co., Stafford Springs, Conn. B
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. B
Strip-Ease—See Standard Card Clothing Co.
Strip-O-Matic—See Booth Co., Benjamin
Tuffer—See Howard Bros.

CARD CLOTHING MOUNTING MACHINERY (See Winders—Fillet)

CARD GRIDS (See Grids—Card)

CARDING SERVICE (See Commission Services)

CARDS—*Cotton*

COQNE, Italy, Repr. by, Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
RIETER & CO., GERMANY, Repr. by: American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Whitin Machine Works, Whitinsville, Mass.

CARDS—*Cotton Waste*

DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 116.
RIETER & CO., GERMANY, Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Whitin Machine Works, Whitinsville, Mass.

CARDS—*Hand*

Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
HOWARD BROS. MFG. CO., 44 Vine St., Worcester, Mass. ADV. PG. 95.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.

CARDS—*Sampling*

DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
HOWARD BROS. MFG. CO., 44 Vine St., Worcester, Mass.
ADV. PG. 95.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.
Sheffield Corp., The, 721 Springfield St., Dayton 1, Ohio

CARDS—*Synthetic Staple*

DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.
RIETER & CO., GERMANY, Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

CARDS—*Woolen*

COQNE, Italy, Repr. by, Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
PLATT BROS. & CO., LTD., Aldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Tuffer—See Howard Bros.
Whitin Machine Works, Whitinsville, Mass.

CARDS—*Worsted*

COQNE, Italy, Repr. by, Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

CARD-CUTTING MACHINE (See Jacquard Card-Cutting Machine)

CARD-GRINDING MACHINES (See Grinders—Card, Garnett & Napper)

CARD-LACING MACHINES (See Jacquard Card-Lacing Machine)

CARLOADING SERVICE (See also Trucking Service)

National Carloading Corp., 19 Rector St., New York 6, N. Y.

CARNAUBA WAX (See Waxes—Natural)

CARRIERS—*Braider*

Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass.
ADV. PG. 235.

CARRIERS—*Yarn Package*

American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Burlington Engrg. Co. Inc., Graham, N. C.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.

CARTONS—*Corrugated Fiber*

Container Corp. of America, 38 South Dearborn St., Chicago 3, Ill.
Gair Co. Inc., Robert, 155 East 44th St., New York, N. Y.
GAYLORD CONTAINER CORP., 111 North Fourth St., St. Louis 2, Mo. ADV. PG. 240.
Hinde & Dauch Paper Co., 407 Decatur St., Sandusky, Ohio
Milprint, Inc., 4200 North Holton St., Milwaukee 1, Wis.

CASEIN

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.

CASTERS & WHEELS—*Truck*

Aerol Co. Inc., 2424 San Fernando Rd., Los Angeles 65, Calif.
Airlite—See Aerol Co. Inc.
All Steel Welded Truck Corp., 1149 Railroad Ave., Rockford, Ill.
Atlasite—See Bassick Co.
Baco—See Bassick Co.
BASSICK CO., 437 Howard Ave., Bridgeport 2, Conn. ADV. PG. 217.
Canaphin—See Bassick Co.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Clark Co., George P., Windsor Locks, Conn.
COLEMAN CO., INC., Greenville, S. C. ADV. PGS. 80, 81.
Colson Corp., The, Cedar St., Elyria, Ohio
Daniels, Inc., C. R., Daniels, Md.
DARNELL CORP., 12000 Woodruff Ave., Downey, Calif. ADV. PG. 190.
Divine Brothers Co., 200 Seward Ave., Utica 1, N. Y.
FAIRBANKS CO., THE, 393 Lafayette St., New York 3, N. Y. ADV. PG. 188.
FAULTLESS CASTER CO., 1521 North Garvin St., Evansville, Ind. ADV. PG. 223.
Floating-Hub—See Bassick Co.
Forgeweld—See Service Caster & Truck Corp.
Hamilton Caster & Mfg. Co., 1637 Dixie Highway, Hamilton, Ohio
Island Equipment Co., 27-01 Bridge Plaza N., Long Island City, N. Y.
Jarvis & Jarvis, Ind., 301 South Main St., Palmer, Mass.
Lane & Bros., W. T., Poughkeepsie, N. Y.
Market Forge Co., 35 Garvey St., Everett Station, Boston 49, Mass.
Meadows Mfg. Co., Murphy & Astor Aves., S. W., Atlanta, Ga.
Mercury Mfg. Co., 4026 Halsted St., Chicago, Ill.
NUTTING TRUCK & CASTER CO., Faribault, Minn. ADV. PG. 226.
Pressweld—See Service Caster & Truck Corp.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Service Caster & Truck Corp., 529 North Albion St., Albion, Mich.
VESCO INC., 5023 Wilkinson Blvd., Charlotte, N. C. ADV. PG. 234.
Wellington Machine Co., Wellington, Ohio

CASTINGS—*Iron*

Crucible Steel Co. of Amer., Oliver Building, Pittsburgh, Pa.
WAUKESHA FOUNDRY CO., PUMP DIV., Waukesha, Wis. ADV. PG. 194.

CASTINGS—*Nickel Alloy*

Crucible Steel Co. of Amer., Oliver Building, Pittsburgh, Pa.
WAUKESHA FOUNDRY CO., PUMP DIV., Waukesha, Wis. ADV. PG. 194.

CASTINGS—*Stainless Steel*

COOPER ALLOY FOUNDRY CO., THE, Hillside, N. J. ADV. PG. 183.
Crucible Steel Co. of Amer., Oliver Building, Pittsburgh, Pa.
V2B—See Cooper Alloy Foundry Co., The
WAUKESHA FOUNDRY CO., PUMP DIV., Waukesha, Wis. ADV. PG. 194.

CASTOR OIL (See Oil—Natural)

CASTOR OIL—*Sulfonated* (See Wetting Agents)

CAUSTIC POTASH (See Potassium—Salts of—Hydroxide)

CAUSTIC SODA (See Sodium—Salts of—)

CEILING CONDENSERS

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
Whitin Machine Works, Whitinsville, Mass.

CELLOSOLVE ACETATE (See Solvents)

CELLULOSE ACETATE

Eastman Chemical Products, Inc., Kingsport, Tenn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
du Pont De Nemours & Co., Inc., E. I., Plastics Sales Section, Polychemicals Dept., Wilmington, Del.
du Pont de Nemours & Co., Inc., E. I., Textile Fibers Dept., Wilmington 9, Del.
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Sylvania Div., American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

CELLULOSE NITRATE (See Pyroxylin)

CENTRIFUGLAS (See Extractors—Centrifugal)

CERESIN WAX (See Waxes—Natural)

CHAINS

Balance . . . . . A
Block . . . . . B
Conveyor & Elevator C
Power Transmission (Roller) . . . . . D
Power Transmission (Silent) . . . . . E

BUSCHMAN CO., E. W., Clifton & Spring Grove, Cincinnati, Ohio . . . . . C, D, E
ADV. PG. 170.
Baldwin-Rex—See Chain Belt Co.
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis. . . . . B, C, D
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill. . . . . B, C, D, E
Diamond Chain & Mfg. Co., 402 Kentucky Ave., Indianapolis 7, Ind. . . . . B, C, D
Dodge Mfg. Corp., Mishawaka, Ind. . . . . D
Island Equipment Co., 27-01 Bridge Plaza N., Long Island City, N. Y. C
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. . . . . A, B, C, D, E
ADV. PG. 83.
Mechanical Handling Systems, Inc., 4600 Nancy Ave., Detroit 12, Mich. C
Morse Chain Co., 7601 Central Ave., Detroit 8, Mich. . . . . C, D, E
Palmer-Bee Co., Westminster & G. T. R. R., Detroit 2, Mich. . . . . C, D
Rex—See Chain Belt Co.
Round & Son, David, P. O. Box 883, Cleveland 22, Ohio . . . . . B
SARGENT'S SONS CORP., C. G., Graniteville, Mass. C
ADV. PG. 127.
Silverstreak—See Link Belt Co.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C. . . . . C, D, E
Smith & Son, E. E., Gastonia, N. C. . . . . A, D, E
Union Chain & Mfg. Co., Sandusky, Ohio . . . . . C, D, E
Webster Manufacturing, Inc., Tiffin, Ohio C
Whitney Chain Co., 211 Hamilton St., Hartford, Conn. . . . . D, E

CHAIRS—*Factory* (See Stools & Chairs—Factory)

CHALK—*Colored* (See Crayons—Marking also Calcium—Salts of—Carbonate)

CHELATING AGENTS (See Water Treatment—Water Softening Agents)

CHINA CLAY (*Kaolin*)

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.

CHINCHILLA MACHINES

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Hunter Mach. Co., James, North Adams, Mass.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.

CHLORIDE OF LIME (See Calcium—Salts of—Hypochlorite)

CHLORINE

Belle Alkali Co., Belle, W. Va.
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Hooker Electrochemical Co., 4 47th St., Niagara Falls, N. Y.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa.
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ADV. PG. 274.
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 287.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

CHLORINE DIOXIDE

MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.

CHLOROFORM (See Solvents)

CHROME ALUM

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.

CHROME COLORS

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.

Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio

CHROMIUM ACETATE (See Mordants)

CHROMIUM CHLORIDE (See Mordants)

CHROMIUM FLUORIDE (See Mordants)

CIRCUIT BREAKERS

Allis-Chalmers Mfg. Co., 1120 S. 70th St., Milwaukee 1, Wis.
General Elec. Co., Schenectady 5, N. Y.
Square D Company, 6060 Rivard St., Detroit 11, Mich.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

CITRIC ACID (See Acids)

CLEANERS—*Air* (See Collectors—Dust & Fume)

CLEANERS—*Cotton*

Blend-Master—See Gastonia Textile Machinery Corp. Inc.
Cen-Tennial Cotton Gin Co., Columbus, Ga.
Centrif Air Machine Co., Inc., The, P. O. Box 2164, Atlanta 1, Ga.
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C.
Jr. Super Cleaner—See Gastonia Textile Machinery Corp. Inc.
Lummus Cotton Gin Co., Columbus, Ga.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Salisbury Iron Works, Salisbury, N. C.
Super Cleaner—See Gastonia Textile Machinery Corp. Inc.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Tweedles & Smalley (1920) Ltd., Rochdale, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

CLEANERS—*Cotton, Chemical*

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
National Analine Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Wis. ADV. PG. 262, 263.

CLEANERS—*Loom*

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
Breuer Electric Mfg. Co., 5100 North Ravenswood Ave., Chicago 40, Ill.
Electric Blower Co., 352 Atlantic Ave., Boston 10, Mass.
Hoffco-Voc—See United States Hoffman Machinery Corp.
Livingstone Engineering Co., 100 Grove St., Worcester, Mass.
New England Machine Works, 574 East Main St., Waterbury, Conn.
Tennant Co., G. H., 2586 North Second St., Minneapolis 11, Minn.
United States Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y.

CLEANERS—*Loom, Chemical*

ATC Loom Cleaner—See Selig Co., The
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Penetone Co., The, Tenafly, N. J.
SELIG CO., THE, 336-350 Marietta, N. W., Atlanta, Ga. ADV. PG. 282.
Senior—See Penetone Co., The, Tenafly, N. J.

CLEANERS—*Portable Industrial Floor Vacuum & Blowers*

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
Ace Co., The, P. O. Box 1212, Ocala, Fla.
Alaco—See Ace Co., The
American Vacuum Co., 820 South Michigan Ave., Chicago 5, Ill.
Arco—See American Vacuum Co.
Arco Wand—See American Vacuum Co.
Black & Decker Mfg. Co., The, 600 E. Pennsylvania Ave., Towson, Md.
Breuer Electric Mfg. Co., 5100 North Ravenswood Ave., Chicago 40, Ill.
Hild Floor Machine Co., 740 West Washington, Chicago, Ill.
Invincible Vacuum Cleaner Mfg. Co., 14th & Davis Sts., Dover, Ohio
Kent Co. Inc., The, 361 Canal St., Rome, N. Y.
Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.
National Super Service Co., Inc., 1946 North 13th St., Toledo 2, Ohio.
Spencer Turbine Co., 484 New Park Ave., Hartford 6, Conn.
Vacker—See The Black & Decker Mfg. Co.

CLEANERS—*Quill* (See Bobbin-Stripping Machines)

CLEANERS—*Reed* (See also Reed Cleaning Machines)

AFFUTEX, Copenhagen, Denmark Repr. by Edda International, 468 4th Ave. New York 16, N. Y. ADV PG. 92.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hudson Reed & Harness Co., 124 Leonard St., Jersey City 7, N. J.
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Shawmut Engineering Co., 195 Freeport St., Boston 22, Mass.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Southern Loom Reed Mfg. Co., Gaffney, S. C.

CLEANERS—*Reed, Chemical*

Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Penetone Co., The, Tenafly, N. J.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.

CLEANERS—Spinning Frame Roll

Amoskeag—See M-B Products Co.
Breuer Electric Mfg. Co., 5100 North Ravenswood Ave., Chicago 40, Ill.
M-B Products Co., 46 Victor Ave., Detroit 3, Mich.
THOMA, Zurich, Switzerland Repr. by Stellite American Corp. 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
Whitin Machine Works, Whitinsville, Mass.

CLEANERS—*Spinning Frame Roll, Chemical*

Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Penetone Co., The, Tenafly, N. J.
Senior—See Penetone Co., The, Tenafly, N. J.

CLEANERS—*Traveling Blower*

Ace Co., The, P. O. Box 1212, Ocala, Fla.
Alaco—See Ace Co., The
American Monorail Co., 13107 Athens Ave., Cleveland, Ohio
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Electric Blower Co., 352 Atlantic Ave., Boston 10, Mass.
Louden Machinery Co., 607 Broadway, Fairfield, Iowa
Marvel—See Electric Blower Co.
Parco—See Parks-Cramer Co.
Parks-Cramer Co., Fitchburg, Mass.

CLEANERS—*Vacuum* (See Cleaners—Portable Industrial Floor Vacuum or Strippers—Card)

CLEANING COMPOUNDS (See Cleaners—Floor & Equipment Compounds)

CLEARERS—*Flat & Revolving*

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185.
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa.
DFD—See Collins Supply & Equipment Co.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Noble Co., Roy, New Bedford, Mass.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
Roberts Company, P. O. Box 931, Sanford, N. C.
Shipman Supply Co., Front & Reagan Sts., Sunbury, Pa.
Textile Laboratories, P. O. Box 1003, Gastonia, N. C.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Whitin Machine Works, Whitinsville, Mass.

CLIPPERS—*Selvage-Loop* (See Cutters—Selvage-Loop)

CLIPS—*Tenter*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

CLOCKS (See Counters)

CLOTH (See also Blankets)

Buffing ..... **A**
Card Grinding ..... **B**
Filter ..... **C**
Mechanical ..... **D**
Wire ..... **E**

Aetna Felt Co., 204 Centre St., New York 13, N. Y. ..... A, B, C, D
Albany Felt Co., 1373 Broadway, Albany 1, N. Y. ..... D, C
ASHWORTH BROS. INC., Fall River, Mass ..... B
ADV. PG. 161.
Best & Co., Edward H., 222 Purchase St., Boston, Mass. ..... D, C
Buffalo Wire Works Co., 308 Terrace St., Buffalo, N. Y. ..... E
Cambridge Wire Cloth Co., The, 152 Linkwood Rd., Cambridge, Md. ..... C, E
Cleveland Wire Cloth & Mfg. Co., 3573 East 78 St., Cleveland 5, Ohio ..... E
Daniels Inc., C. R., Daniels, Md. C
Gyroloy—See Hewitt Robbins Inc.
Hamilton Web Co., Hamilton, R. I. ..... D
Heaton & Sons Ltd., Hearl, Liversedge, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass ..... B
Hetherington & Sons, Inc., John, Gastonia, N. C. ..... B
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y. ..... E
Hope Webbing Co., P. O. Box 1495, Providence 1, R. I. ..... D
House, Charles W., Unionville, Conn. ..... C, D
HUYCK & SONS., F. C., NOONE DIV., Peterborough, N. H. ..... C, D
ADV. PG. 225.
Jenkins Metal Shops, Inc., Gastonia, N. C. ..... E
Ludlow-Saylor Wire Co., The, 634 South Newstead Ave., St. Louis 10, Mo. ..... E
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J. ..... D
Mertecfelt Corp., P. O. Box 688, Englewood, N. J. ..... C, D
Newark Wire Cloth Co., 370 Verona Ave., Newark 4, N. J. ..... C, E
Norton Co., Behr-Manning Corp. Div., 754 Seifert St., Troy, N. Y. ..... A, B
Roy & Son Co., B. S., 775 Southbridge St., Worcester 3, Mass. ..... B
Orr Felt & Blanket Co., Piqua, Ohio ..... D
Tyler Co., W. S., 3615 Superior Ave., Cleveland 14, Ohio ..... C, E

CLOTH BRUSHING MACHINES (See Brushing Machines)

CLOTH LUSTERING MACHINES (See Lustering Machines)

CLOTH MARKING MACHINES (See Marking Machines also Numbering Machines)

CLOTH MEASURING MACHINES (See Counters—Cloth Yardage)

CLOTHING—*Card* (See Card Clothing—Metallic or Wire)

CLOTHING—*Napper* (See Napper Clothing)

CLUTCH FACINGS

Gatke Corp., Industrial Dept., 246 North La Salle St., Chicago 1, Ill.
Raybestos-Manhattan, Inc., Passaic, N. J.
Velvetouch—See Wellman Co., The S. K.
Wellman Co., The S. K., 200 Egbert Rd., Bedford, Ohio

CLUTCHES

Disk ..... A
Electric ..... B
Friction C
Hydraulic ..... D
Spindle ..... E
Magnetic ..... F

American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich. ..... D
BLM Clutch Corp., Toronto, Ontario, Canada—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. C
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill. C
Clark Mfg. Co., The, 1830 East 38th St., Cleveland 14, Ohio ..... B
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96. ..... A, C
Conway Clutch Co., The, 2747 Coleraln Ave., Cincinnati 14, Ohio ..... A, C
CURTISS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass C
ADV. PG. 122, 123.
Diamond D—See Dodge Mfg. Corp.
Dodge Mfg. Corp., Mishawaka, Ind. C
DRAPER CORP., Hopedale, Mass. ..... A, E
ADV. PG. 1.
High-Duty—See Stearns Magnetic, Inc.
Hilliard Corp., The, 102 West Fourth St., Elmira, N. Y. ..... A, C
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. C
ADV. PG. 83.
Louis Allis Co., The, 427 East Stewart St., Milwaukee 7, Wis. ..... B
Metroloy Corp. Div., Mercury Clutch Dept., Automatic Steel Products, Canton 6, Ohio C
Morse Chain Co., 7601 Central Ave., Detroit 8, Mich. C
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ..... E
ADV. PG. 118.
Rolling Grip—See Dodge Mfg. Corp.
Roney & Rae Co., 159 Green St., Woonsocket, R. I. ..... E
Sil-Not Belting Corp., Box 3061, Greensboro, N. C. ..... A, C
Stearns Magnetic, Inc., 646 South 28th St., Milwaukee 46, Wis. ..... F
Thermoid Corp., Whitehead Rd., Trenton 6, N. J. C
TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis. ..... A, C, D
ADV. PG. 240.
Warner Electric Brake & Clutch Co., Industrial Div., Beloit, Wisc. ..... B, C
Webster Manufacturing, Inc., Tiffin, Ohio C
Whitin Machine Works, Whitinsville, Mass. ..... C, E

COATING AGENTS (See under Individual Headings, Cellulose Acetate, Pyroxylin, Etc.)

COAL-TAR COLORS (See Dyes)

COATING MACHINES—*Fabric*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
Black-Clawson Co., The, Dilts Machine Works Div., Fulton, N. Y.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. ADV. PG. 232.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Ecco—See Waldron Corp., John
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Lanly Co., The, 750 Prospect, Cleveland, Ohio
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Micro Jet—See Waldron Corp., John
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

COCONUT OIL (See Oil—Natural)

COILERS—Warp & Sliver

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Southern States Equipment Co., Hampton, Ga.
Whitin Machine Works, Whitinsville, Mass.

COILS—Pipe (See also Plates—Heating & Cooling)

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Brighton Copper Wks., Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio.
Bush Manufacturing Co., 179 South St., West Hartford, Conn.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga.
ADV. PG. 108.
Crane Co., 836 South Michigan Ave., Chicago 5, Ill.
Creamery Package Mfg. Co., The, 1243 West Washington Blvd., Chicago 7, Ill.
Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I.
Kook More—See Langenkamp Co., F. H.
Langenkamp Co., F. H., 229 E. South St., Indianapolis, Ind.
McQuay, Inc., 1600 Broadway, N. E., Minneapolis 13, Minn.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.
ADV. PG. 127.
Tranter Mfg. Inc., 735 East Hazel St., Lansing, Mich.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.

COLLECTORS—*Broken End & Noil, Vacuum*

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Pneumafil Corp., Charlotte, N. C.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
THOMA, Zurich, Switzerland Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.

COLLECTORS—*Dust & Fume*

Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass.
AMERICAN AIR FILTER CO., INC., First & Central Aves., Louisville 8, Ky. ADV. PG. 239.
American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
Brady Conveyors Corp., 20 West Jackson Blvd., Chicago 4, Ill.
Breuer Electric Mfg. Co., 5100 North Ravenswood Ave., Chicago 40, Ill.
Dracco Corp., 4072 East 116th St., Cleveland 5, Ohio
Electrovent Fan & Mfg. Co., 812 West Lake St., Chicago, Ill.
Forth Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex.
Holly Pneumatic Sys. Inc., 15-1-East 40th St., New York 16, N. Y.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Roto-Clone—See American Air Filter Co., Inc.
Spencer Turbine Co., 484 New Park Ave., Hartford 6, Conn.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.

COLLECTORS—*Lint & Fly*

Airmat—See American Air Filter Co., Inc.
Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass.
AMERICAN AIR FILTER CO., INC., First & Central Aves., Louisville 8, Ky. ADV. PG. 239.
Electro-Cell—See American Air Filter Co., Inc.
Electro-Matic—See American Air Filter Co., Inc.
Electro-Pl.—See American Air Filter Co., Inc.
Electronic Precipitator—See American Air Filter Co., Inc.
Electrovent Fan & Mfg. Co., 812 West Lake St., Chicago, Ill.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Rushton-Carroll Co., 218 Auburn St., Cambridge 39, Mass.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.
Whitin Machine Works, Whitinsville, Mass.

COLLOID MILLS (See Mills—Colloid)

COLLOIDON

Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.

COLOR COMPARATORS

American Optical Co., Instrument Div., Buffalo 15, N. Y.
Analyte—See Crown Engineering & Sales Co.
CROWN ENGINEERING & SALES CO., 421 Hill St., Harrison, N. J. ADV. PG. 216.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Instrument Devel. Labs. Inc., 163 Highland Ave., Needham Heights, Mass.
Macbeth-Ansco—See Macbeth Corp.
Macbeth Corp., P. O. Box 950, Newburgh, N. Y.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.

COLOR LAKES (See Lake Colors)

COMB BOXES

Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Southern States Equipment Co., Hampton, Ga.
Whitin Machine Works, Whitinsville, Mass.

COMB CIRCLES

Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Elmwood Brush Co., 20 John St., Hartford 6, Conn.
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.

COMBER PARTS—*Cotton*

FLEMING, BIRKBY (PINS) LTD., Brighouse, England, Repr. by R. J. Dealy, 263 Summer St., Boston, Mass. ADV. PG. 162.
Gastonia Textile Sheet Metal Works, Gastonia, N. C.

COMBERS—*Cotton*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Hetherington & Sons, Inc., John, Gastonia, N. C.
RIETER & CO., Germany, Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
TERRELL MACHINE CO., INC., THE, 3000 South Boulevard, P. O. Box 928, Charlotte 1, N. C.
ADV. PG. 171.
Whitin Machine Works, Whitinsville, Mass.

COMBERS—*Worsted (French or Rectilinear)*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Schlumberger & Cie, Guebwiller, France—Represented by Texplant Corp., 65 Bedford St., Stamford, Conn.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Tsotta Fraschini, Milan, Italy Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242.

COMBERS—*Worsted (English or Noble)*

PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SANT ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
SMITH & SON INC., JAMES, 982 Southbridge St., Worcester 3, Mass. ADV. PG. 248.
Smith & Smith Inc., 982 Southbridge St., Worcester 3, Mass.

COMBING SERVICE (See Commission Services)

COMBS

Beamer, Warper & Slasher . . . . . A
Doffing . . . . . B
Expansion C
Weaving . . . . . D

Acme Loom Harness & Reed Co., Greenville, S. C. A, C, D
ALLEN BEAM CO., 136 River Rd., New Bedford, Mass. ADV. PG. 193. A, C
Allen Warper Co., 40-44 Church St., Lowell, Mass. A, C, D
BARKER COMB & RUB. DIV., Souderton, Pa. D ADV. PG. 204.
Carolina Loom Reed Co., P. O. Box 1536, Greensboro, N. C. A, C, D
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96. A, C
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Emmons Loom Harness Co., 7 May St., Lawrence, Mass. A, C, D
Greensboro Loom Reed Co. Inc., Greensboro, N. C. A, C
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa. D
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J. A, C, D
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. D ADV. PG. 199.
PAVIA SHUTTLE CO., THE, 415-419 Auburn St., Allentown, Pa. C ADV. PG. 200.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass. A
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J. A, C, D
Southern Loom Reed Mfg. Co., Gaffney, S. C. A, C, D
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa. A, C, D
Stehedco—See Steel Heddle Mfg. Co.
Whitin Machine Works, Whitinsville, Mass. B

COMMISSION SERVICES

Bleaching of Fur & Hair Fibers . . . . . A
Bleaching, Dyeing, Printing & Finishing . . . B
Blending C
Carding and/or Combing . . . . . D
Garnetting . . . . . E
Plastic Coating for Machine Parts . . . . . F
Testing Laboratories . . . . . G
Throwing (Synthetics and/or Silks) . . . . . H
Plating (Chromium, etc.) I

Atlantic Rayon Corp., 350 Fifth Ave., New York 1, N. Y. B
Caldwell, Farley M., 1107 Richwood Ave., Cincinnati 26, Ohio I
Franklin Process, 40 Worth St., New York, N. Y. B
GLOBE DYE WORKS CO., 4500 Worth St., Philadelphia 24, Pa. B ADV. PG. 294.
HOFFNER RAYON CO., Belgrade & Ontario Sts., Philadelphia, Pa. B, H ADV. PG. 292.
INDUSTRIAL COATINGS, INC., Box 3026, Station A, Greenville, S. C. F ADV. PG. 290.
JONAS PRODUCTS, INC., JAMES A., 3 East 69th St., New York 21, N. Y. A ADV. PG. 292.
KAHN & FELDMAN, 200 Madison Ave., N. Y. 16, N. Y. Mills: 360 Suydam St., Brooklyn, N. Y., Jefferson Mills, Pulaski, Virginia H ADV. PG. 291.
McKelvie Machine Co., 832-834 North Marietta St., Gastonia, N. C. I
NATIONAL CHROMIUM CO., INC., Putnam, Conn. I ADV. PG. 293.
Oscar Heineman Corp., Div. of Aetna Industrial Corp., 2701 Armitage Ave.,Chicago 47, Ill. H
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa. I
Precision Chrome & Finishing Corp., 370 Park Ave., Worcester 2, Mass. I
Sayles Finishing Plants, Inc., Saylesville, R. I. B
Snell, Inc., Foster D., 29 West 15th St., New York, N. Y. G
SOUTH FLORIDA TEST SERVICE, 4201 Northwest Seventh St., Miami 34, Fla. G ADV. PG. 292.
Star Woolen Co., Cohoes, N. Y. C, E
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa. I
Stehedco—See Steel Heddle Mfg. Co.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. G ADV. PG. 294.
WALTON & LONSBURY, 78 North Ave., Attleboro, Mass. I ADV. PG. 290.
Whitaker Co. Fred, Ridge Ave. & Scotts Lane, Philadelphia 29, Pa. B, D

COMPARATORS—*Color* (See Color Comparators)

COMPARATORS—*pH Slide* (See Instruments—pH Indicator)

COMPENSATORS—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W. Bethayres, Pa. ADV. PG. 120, 121.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 125.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

COMPENSATORS—*Motor Starting* (See Controls—Automatic and Manual Motor)

COMPLEXING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
BERSWORTH CHEMICAL CO., Framingham, Mass. ADV. PG. 270.
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.

COMPRESSORS—*Air* (See Air Compressors)

COMPRESSORS—*Thread* (See Thread Compressors)

COMPRESSORS—*Warp* (See Warp Compressors)

CONDENSATION RETURN UNITS

Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.

CONDENSERS—*Apron* (See Tape Condensers)

CONDENSERS—*Ceiling* (See Ceiling Condensers)

CONDENSERS—*Cotton* (See Cotton Condensers)

CONDENSERS—*Ring Doffer* (See Ring Doffer Condensers)

CONDENSERS—*Surface, Jet & Barometric Pressure*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Blackburn Smith Mfg. Co., 95 River St., Hoboken, N. J.
Brighton Copper Wks. Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Elliott Co., Jeannette, Pa.
Kewanee-Ross Corp., 1407 West Ave., Buffalo 13, N. Y.
Scott & Co. Inc., Ernest, 189 Anawan St., Fall River, Mass.
Superior Combustion Industries, Inc., Times Tower, Times Square, New York 18, N. Y.
Foster Wheeler Corp., 165 Broadway, New York, N. Y.
Wheeler Mfg. Co., C. H., Lehigh & Sedgley Aves., Philadelphia 32, Pa.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

CONDENSERS—*Tape* (See Tape Condensers)

CONDITIONERS—*Air* (See Air Conditioners—Unit-Type)

CONDITIONERS—*Cloth* (See Dryers—Piece Goods or Ovens—Conditioning)

CONDITIONERS—*Hosiery* (See Dryers—Knit Goods)

CONDITIONERS—*Water* (See Water Treatment)

CONDITIONERS—*Yarn* (See also Dryers Infrared)

H.-W.—See Industrial Dryer Corp.
INDUSTRIAL DRYER CORP., 432 Fairfield Ave., Stamford, Conn. ADV. PG. 210.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
TURBO MACHINE CO., Lansdale, Pa. ADV. PG. 177.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.

CONDITIONING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y., ADV. PG. 283.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Kearny Mfg. Co. Inc., 681 Schuyler Ave., Kearny, N. J.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

CONDITIONING OVENS (See Ovens—Conditioning)

CONDUIT—*Electrical and Fittings*

American Brass Co., The, Waterbury 88, Conn.
Appleton Electric Co., 1713 Wellington Ave., Chicago 13, Ill.
Unilets—See Appleton Electric Co.

CONES—*Paper*

American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.

Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
SONOCO PRODUCTS CO., Hartsville, S. C. ADV. PG. 175.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.

CONES—*Perforated* (See Tubes—Perforated)

CONES—*Synthetic*

SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.

CONES—*Wood*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Banton Bros., Inc., Newport, Me.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
Noble Co., Roy, New Bedford, Mass.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
Trinacria Specialty Mfg. Co., Norwich, Conn.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.

CONING OILS (See Lubricants—Fiber & Yarn)

CONSULTANTS (See Engineers—Cost or Engineers—Management)

CONTROL CENTERS—*Electric*

ALLEN-BRADLEY CO., 120 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Trumbull Electric Dept., General Electric Co., 41 Woodford Ave., Plainville, Conn.

CONTROLS—*Automatic & Manual Motor*

A-H—See Arrow Hart & Hegeman Elec. Co.
ALLEN-BRADLEY CO., 120 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Arrow Hart & Hegeman Elec. Co., 103 Hawthorne St., Hartford 6, Conn.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Bull Dog Electric Prod. Co., 7610 Jos. Campau St., Detroit 32, Mich.
B/W Controller Corp., 2200 East Maple Rd., Birmingham, Mich.
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Clark Controller Co., 1146 East 152nd St., Cleveland 10, Ohio
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Electric Controller & Mfg. Co., 2701 East 79th St., Cleveland 4, Ohio
Electro Devices Inc., Servo-Speed Div., 4 Godwin Ave., Paterson 1, N. J.
Federal Electric Products Co., 50 Paris St., Newark 5, N. J.
Fulscope—See Taylor Instrument Companies
General Elec. Co., Apparatus Sls. Div.—Bldg. 23, Schenectady, N. Y.
GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass. ADV. PG. 245.
Ideal Electric & Mfg. Co., Mansfield, Ohio
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
National Acme Co., 170 East 131 St., Cleveland 8, Ohio
Penn Controls Inc., Goshen, Ind.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Square D Company, 6060 Rivard St., Detroit 11, Mich.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Trumbull Electric Dept., General Electric Co., 41 Woodford Ave., Plainville, Conn.
Vacu-Break—See Bull Dog Electric Prod. Co.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

CONTROLS—*Automatic Detwisting*

MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.

CONTROLS—*Automatic Doors*

National Pneumatic Co., Inc., 125 Amory St., Boston 19, Mass.
Magic Door—See Stanley Works, The
Magic Eye—See Stanley Works, The
Stanley Works, The, Magic Door Div., 207 Lake St., New Britain, Conn.

CONTROLS—*Automatic Spinning*

Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Lewellen Mfg. Co., Columbus, Ind.

CONTROLS—*Automatic Yarn-Gauge*

Standard Electronic Research Corp., 2 East End Ave., New York 21, N. Y.

CONTROLS—*Carding Machines*

Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.

CONTROLS—*Color-Measurement*

Color-Eye—See Instrument Devel. Labs. Inc.
Instrument Devel. Labs. Inc., 163 Highland Ave., Needham Heights, Mass.
Macbeth Corp., P. O. Box 950, Newburgh, N. Y.

CONTROLS—*Combustion* (See Regulators—Damper & Draft)

CONTROLS—*Damper Regulating* (see Regulators—Damper and Draft)

CONTROLS—*Dyeing Machine*

Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Foxboro Co., Inc., Foxboro, Mass.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Thies, B., Coesfeld/Westf., Germany
Venengo Engrg. Co., G., Lycoming Sts., Philadelphia 24, Pa.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

CONTROLS—*Filling Straightening* (See Filling Straightening Devices)

CONTROLS—*Fluid-Flow*

Askania Regulator Co., 240 East Ontario, Chicago 11, Ill.
Autronic—See Swartwout Company
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Clark Mfg. Co., The, 1830 East 38th St., Cleveland 14, Ohio
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Fisher Governor Co., 203 South First Ave., Marshalltown, Iowa
Foxboro Co., Inc., Foxboro, Mass.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Hagan Corp., Hagan Bldg., Pittsburgh, Pa.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Phialdelphia 70, Pa.
Penn Controls Inc., Goshen, Ind.
Republic Flow Meters, 2240 Diversey Pkway., Chicago 47, Ill.
Squires Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Trimount Instrument Co., 3119 West Lake St., Chicago 12, Ill.

CONTROLS—*Humidity*

Amco—See American Moistening Co.
American Mach. & Metals, Inc., 233 Broadway, New York 7, N. Y.
AMERICAN MOISTENING CO., 260 West Exchange St., Providence 1, R. I. ADV. PG. 102.
Armstrong Machine Works, Three River, Mich.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Foxboro Co., Inc., Foxboro, Mass.
Humidigraph—See Bristol Co., The
Humid-U-Stat—See Minneapolis-Honeywell Regulator Co.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
Parks-Cramer Co., Fitchburg, Mass.
Penn Controls Inc., Goshen, Ind.
Powers Regulator Co., 3400 Oakton St., Skokie, Ill.
RIHCO—See R. I. Humidifier & Ventilating Co.
R. I. HUMIDIFIER & VENTILATING CO., 99 Chauncy St., Boston 11, Mass. ADV. PG. 214.
Standard Engineering Works, 289 Roosevelt Ave., Pawtucket, R. I.
Supreme Electric Prod. Corp., 194 Vassar St., Rochester 7, N. Y.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Walton Laboratories, Inc., 1186 Grove St., Irvington, N. J.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

CONTROLS—*Liquid-Density*

Foxboro Co. Inc., Foxboro, Mass.

CONTROLS—*Liquid-Level*

ALLEN-BRADLEY CO., 136 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Askania Regulator Co., 240 East Ontario, Chicago 11, Ill.
Autronic—See Swartwout Company
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
B/W Controller Corp., 2200 East Maple Rd., Birmingham, Mich.
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill.
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Fisher Governor Co., 203 South First Ave., Marshalltown, Iowa
Foster Wheeler Corp., 165 Broadway, New York, N. Y.
Foxboro Co., Inc., Foxboro, Mass.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Hagan Corp., Hagan Bldg., Pittsburgh, Pa.
JOHNSON CORP., THE, Three Rivers, Mich. ADV. PG. 253.
Lewellen Mfg. Co., Columbus, Ind.
Liquidepth Indicators Inc., 42-26 28th St., Long Island City, N. Y.
Lumenite Electronic Co., 407 South Dearborn St., Chicago 5, Ill.
Manning & Maxwell & Moore, Inc., 250 East Main St., Stratford, Conn.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24 Mass.
Mercoid Corp., The, 4223 West Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange Sts., Philadelphia 70, Pa.
Penn Controls Inc., Goshen, Ind.
Republic Flow Meters, 2240 Diversey Pkway, Chicago 47 Ill.
Robertshaw-Fulton Controls Co., 2920 North Fourth St. Philadelphia 33, Pa.
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y.
Servo-Tek Prod. Co. Inc., 1086 Goffle Rd., Hawthorne N. J.
Square D Company, 6060 Rivard St., Detroit 11, Mich.
Swartwout Company, 18511 Euclid Ave., Cleveland 12 Ohio
Tank-O-Meter—See Uehling Instrument Co.
Taylor Instrument Companies, 95 Ames St., Rochester 1 N. Y.
Trimount Instrument Co., 3119 West Lake St., Chicago 12, Ill.
Uehling Instrument Co., 473 Getty Ave., Paterson 3 N. J.
United Electric Controls Co., 85 School St., Watertown 72, Mass.

CONTROLS—*Pressure & Vacuum*

ALLEN-BRADLEY CO., 136 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
American Mach. & Metals, Inc., 233 Broadway, New York 7, N. Y.
Askania Regulator Co., 240 East Ontario, Chicago 11, Ill.
Autronic—See Swartwout Company
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Fisher Governor Co., 203 South First Ave., Marshalltown, Iowa

Foxboro Co., Inc., Foxboro, Mass.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Hagan Corp., Hagan Bldg., Pittsburgh, Pa.
Manning & Maxwell & Moore, Inc., 250 East Main St., Stratford, Conn.
Marsh Corp., James P., Skokie, Ill.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Mercoid Corp., The, 4223 West Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
Norgren Co., C. A., 3400 South Elati St., Englewood, Colo.
Penn Controls Inc., Goshen, Ind.
Pressure Trol—See Minneapolis-Honeywell Regulator Co.
Republic Flow Meters, 2240 Diversey Pkway., Chicago 47, Ill.
Scientific Instrument Co., 1041 Second Ave., Detroit 26, Mich.
Square D Company, 6060 Rivard St., Detroit 11, Mich.
Squires Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Trimount Instrument Co., 3119 West Lake St., Chicago 12, Ill.
Vacuumstat—See Minneapolis-Honeywell Regulator Co.
Uehling Instrument Co., 473 Getty Ave., Paterson 3, N. J.
United Electric Controls Co., 85 School St., Watertown 72, Mass.
Vickers, Inc., 1588 Oakman Blvd., Detroit 22, Mich.
Weksler Thermometer Co., Martinique Bldg., 49 West 32 St., New York 1, N. Y.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

CONTROLS—*Slasher*

Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Foxboro Co., Inc., Foxboro, Mass.
Sucker G.m.b.H., Gebruder, M. Gladbach/Rhineland, Germany
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

CONTROLS—*Speed* (See Transmissions—Variable-Speed)

CONTROLS—*Temperature*

ALLEN-BRADLEY CO., 136 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Airswitch—See Minneapolis-Honeywell Regulator Co.
American Mach. & Metals, Inc., 233 Broadway, New York 7, N. Y.
Autronic—See Swartwout Company
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Burling Instrument Co., 5 Vose Ave., South Orange, N. J.
Chronotherm—See Minneapolis-Honeywell Regulator Co.
Farris Stacon Corp., 404 Commercial Ave., Palisades Park, N. J.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Foster Wheeler Corp., 165 Broadway, New York, N. Y.
Foxboro Co., Inc., Foxboro, Mass.
General Elec. Co., Apparatus Sls. Div.—Bldg. 23, Schenectady, N. Y.
Grad-U-Stat—See Minneapolis-Honeywell Regulator Co.
Grad-U-Therm—See Minneapolis-Honeywell Regulator Co.
United Electric Controls Co., 85 School St., Watertown 72, Mass.
Hagan Corp., Hagan Bldg., Pittsburgh, Pa.
H. B. Instrument Co., Amer. & Bristol Sts., Philadelphia, Pa.
Isotemp—See Fisher Scientific Co.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.
Leeds & Northrup Co., 444 North 16th St., Philadelphia, Pa.
Manning & Maxwell & Moore, Inc., 250 East Main St., Stratford, Conn.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Mercoid Corp., The, 4223 West Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
Partlow Corp., 2 Campion Rd., New Hartford, N. Y.
Penn Controls Inc., Goshen, Ind.
Powers Regulator Co., 3400 Oakton St., Skokie, Ill.
Pyro—See Pyrometer Instrument Co., Inc., The
Red Top—See H. B. Instrument Co.
Robertshaw-Fulton Controls Co., 2920 North Fourth St., Philadelphia 33, Pa.
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y.
Scientific Instrument Co., 1041 Second Ave., Detroit 26, Mich.
Squires Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Themoguide—See Taylor Instrument Companies
Time-O-Stat—See Minneapolis-Honeywell Regulator Co.
Weksler Thermometer Co., Martinique Bldg., 49 West 32 St., New York 1, N. Y.
Weston Electric Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

CONTROLS—*Tension-Winding*

Black-Clawson Co., The, Dilts Machine Works Div., Fulton, N. Y.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Electro Devices Inc., Servo-Speed Div., 4 Godwin Ave., Paterson 1, N. J.
Foster Machine Co., Westfield, Mass.
KIDDE & CO., WALTER, 499 Main St., Belleville, N. J. ADV. PG. 149.
Lewellen Mfg. Co., Columbus, Ind.
Link Engineering Co., 13845 Elmira, Detroit 27, Mich.
Loo-Cap—See Link Engineering Co.
Servospeed—See Electro Devices Inc., Servo-Speed Div.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
SPEED CONTROL CORP., 1430 East 289 St., Wickliffe, Ohio. ADV. PG. 230.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis.
TENSION-RITE INDUSTRIES, 1123 Romany Rd., Charlotte, N. C. ADV. PG. 158.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Vickers, Inc., 1588 Oakman Blvd., Detroit 22, Mich.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

CONTROLS—*Tenter-Clip Rail*

Askania Regulator Co., 240 East Ontario, Chicago 11, Ill.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

CONTROLS—*Time-Cycle*

ALLEN-BRADLEY CO., 120 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Barber-Colman Co., Rockford, Ill.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Cramer Co., R. W., Box 58, Center Brook, Conn.
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Flex-O-Timer—See Taylor Instrument Companies
Fol-Flex—See Taylor Instrument Companies
Formatrol—See Prosperity Co., The
Foxboro Co., Inc., Foxboro, Mass.
General Elec. Co., Apparatus Sls. Div.—Bldg. 23 Schenectady, N. Y.
Impulse Sequence—See Bristol Co., The
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
Lumenite Electronic Co., 407 South Dearborn St., Chicago 5, Ill.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Partlow Corp., 2 Campion Rd., New Hartford, N. Y.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
Prospertrol—See Prosperity Co., The
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Tork Clock Co., 1 Grove St., Mt. Vernon, N. Y.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

CONTROLS—*Water-Blending* (See Controls—Temperature)

CONVEYORS

Apron, Belt or Bucket . . . . A
Gravity . . . . B
Overhead Monorail C
Pneumatic . . . . D
Portable Belt . . . . E
Roller . . . . F
Screw or Spiral . . . . G
Vertical Suspended Tray . . . . H

Airveyor—See Fuller Co.
Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass. D
ALVEY CONVEYOR MFG. CO., 9301 Olive St. Road, St. Louis 24, Mo. A, B, E, F
ADV. PG. 237.
Alvey-Ferguson Co., 72 Disney St., Cincinnati 9, Ohio A, B, C, E, F
American Monorail Co., 13107 Athens Ave., Cleveland, Ohio C
Ampere—See Victor Balata & Textile Belting, Inc.
Arrow Products Inc., Grand Rapids 4, Mich. F
Berks Engineering Co., 6th & Chestnut Sts., Reading, Pa. A
Bonded Scale & Machine Co., 79 Kingston, Columbus 7, Ohio A, B, E, F
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass. A
Brady Conveyors Corp., 20 West Jackson Blvd., Chicago 4, Ill. A, B, D, E, F, G
BUSCHMAN CO., E. W., Clifton & Spring Grove, Cincinnati, Ohio A, B, C, E, F, G, H
ADV. PG. 170.
Cable-Veyor—See Hapman-Dutton Co.
Centrif Air Machine Co., Inc., The, P. O. Box 2164, Atlanta 1, Ga. A
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis. A
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill. A, F
CLEVELAND CRANE & ENG. CO., Wickliffe, Ohio B, C
ADV. PG. 241.
COLEMAN CO., INC., Greenville, S. C. A, G
ADV. PGS. 80, 81.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C. A, B, C, E, F
Deco—See Davidson Engineering Co.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. A, B, E, F
ADV. PG. 169.
Dracco Corp., 4072 East 116th St., Cleveland 5, Ohio D
Easton—See Victor Balata & Textile Belting, Inc.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill. A
Fairfield Eng. Co., Marion, Ohio A, B, C, D, E, F
Flexoid—See Smith Power Transmission Co.
Forker Corp., 2044 Random Rd., Cleveland 6, Ohio C
Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex. G
Fuller Co., Fuller Bldg., Catasaqua, Pa. D
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C. A
General Conveyor Co., 22nd St. & 39th Ave., Long Island City, N. Y. A, B, E, F, G
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich. A, E, G
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J. E
Harnischfeger Corp., 4400 National Ave., Milwaukee 46, Wis. C
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass. A
Haslett Chute & Conveyor Co., Oaks, Pa. A, B, E, G
Herbert Products Inc., 74-34 Jamaica Ave., Woodhaven, N. Y. E
Hewitt Robins Inc., Hewitt Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y. A, E
Holly Pneumatic Sys. Inc., 15-I-East 40th St., New York 16, N. Y. D
Continental Gin Co., Industrial Div., Birmingham, Ala. G
Island Equipment Co., 27-01 Bridge Plaza N., Long Island City, N. Y. A, B, E, F
Jeto—See Lake Shore Engineering Co., Conveyor Div.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C. A
Leeds Elec. & Mfg. Co., 19 Michael St., East Haven, Conn. A, B, C, E, F
Liftveyor—See Mechanical Handling Systems, Inc.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. A, C, G
ADV. PG. 83.
Louden Machinery Co., The, 607 Broadway, Fairfield, Iowa C
Marforge—See Market Forge Co.
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass. B, E, F
Mathews Conveyor Co., Ellwood City, Pa. A, B, C, E, F, G
McKinney-Harrington Conveyor Co., 1305 Morrow Ave., North Chicago, Ill. A, E
Mechanical Handling Systems, Inc., 4600 Nancy Ave., Detroit 12, Mich. A, B, C, E, F
New York Belting & Packing Co., One Market St., Passaic, N. J. A
Norlander-Young Machine Co., York Rd., Gastonia, N. C. A
Ohio—See Forker Corp.

Oliver Corp., Farquhar Div., A. B., 142 North Duke St., York, Pa. A, B, E, F
Olson Mfg. Co., 2418 Bloomingdale Ave., Chicago 47, Ill. A, B, F
Palmer-Bee Co., Westminster & G. T. R. R., Detroit 2, Mich. A, B, C, F
Philadelphia Belting Co., Sixth & Spring Garden Sts., Philadelphia 23, Pa. A
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. A, D
ADV. PG. 115.
Reversing—See Gastonia Textile Machinery Corp. Inc.
Rex—See Chain Belt Co.
Richards-Wilcox Mfg. Co., Third St., Aurora, Ill. C
Rollerveyor—See Mechanical Handling Systems, Inc.
Roll-Or-Wheel—See E. W. Buschman Co.
Rushton-Carroll Co., 218 Auburn St., Cambridge 39, Mass. D
Salisbury Iron Works, Salisbury, N. C. A
SARGENT'S SONS CORP., C. G., Graniteville, Mass. A
ADV. PG. 127. E, G
Smith Power Transmission Co., 1545 East 23 St., Cleveland 14, Ohio A, B, C, E, F
Spencer Turbine Co., 484 New Park Ave., Hartford 6, Conn. D
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa. A, B, D, G
Standard Conveyor Co., 315 Northwest Second Ave., North St. Paul 8, Minn. A, B, E, F, G
STEPHENS-ADAMSON MFG. CO., 48 Ridgeway Ave., Aurora, Ill. A, F, G
ADV. PG. 163.
Surray Company, Camp Croff, Spartanburg, S. C. A, E
Supreme—See Victor Balata & Tetxile Belting, Inc.
TERRELL MACHINE CO., INC., THE, 3000 South Boulevard, P. O. Box 928, Charlotte 1, N. C. A
ADV. PG. 171.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. A
ADV. PG. 169.
Textile Leather & Cement Co., 40 Andrews St., Lowell, Mass. A
Thermoid Corp., Whitehead Rd., Trenton 6, N. J. A
Tipp—See Triangle Equipment Co. Inc.
TODD-LONG PICKER APRON CO., Gastonia, N. C. A
ADV. PG. 236.
Tote-all—See Lake Shore Engineering Co.
Tramrail—See Cleveland Crane & Eng. Co.
Transveyor—See Mechanical Handling Systems, Inc.
Triangle Equipment Co. Inc., 45 River Rd., Nutley, N. J. B, C, E
Trojan—See E. W. Buschman Co.
Union Chain & Mfg. Co., Sandusky, Ohio A
Union Steel Products Co., Pine & Berrien Sts., Albion, Mich. A
United Iron Works Co., Pittsburg, Kan. A, G
Universal—See Philadelphia Belting Co.
Victor Balata & Textile Belting, Inc., 53 Park Place, New York 7, N. Y. A
Webster Manufacturing, Inc., Tiffin, Ohio A, G
Wehle Conveyor Co., 203 Water St., Binghamton, N. Y. A
Wendway—See Union Steel Products Co.
Wheelveyor—See Mechanical Handling Systems, Inc.
Whitin Machine Works, Whitinsville, Mass. A
Ziz-zag—See Richards-Wilcox Mfg. Co.

COOLERS—*Air* (See Air Conditioners—Central Type, also Air Conditioners—Unit-Type)

COOLERS—*Drinking Water* (See Coolers—Water)

COOLERS—*Evaporative* (See Humidifiers—Room)

COP HOLDERS (See Holders—Cop)

COPPER AND BRASS FITTINGS (See Fittings—*Copper & Brass*)

COPPER CHLORIDE (See Cupric & Cuprous—Salts of Chloride)

COPPER NITRATE (See Cupric—Salts of—Nitrate)

COPPER SULFATE

Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y.
ADV. PG. 267.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga.

COPPER SULFIDE (See Cupric—Salts of—Sulfide)

COPS (See Bobbins)

CORD—*Dobby & Harness* (See Straps—Loom)

CORDAGE MACHINES

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
HASKELL-DAWES MACH. CO. INC., 2231 East Ontario St., Philadelphia, Pa.
ADV. PG. 204, 212, 220.

CORES—*Wood, Steel, Aluminum*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me.
ADV. PG. 176.
PRODUCTION METAL PRODUCTS CO., INC., 1550 West Cortland St., Chicago 22, Ill.
ADV. PG. 196.

CORN STARCH (See Starch—Natural)

CORN SUGAR—(See Glucose)

CORN SYRUP (See Glucose)

CORROSION PREVENTIVES

BABBITT STEAM SPECIALTY CO., Babbit Square, New Bedford, Mass. ADV. PG. 233.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Cheesman-Elliot Co., 639 Kent Ave., Brooklyn 11, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hysol—See Houghton Laboratories, Inc.
Master Lubricants Co., 962 East Fourth St., Los Angeles, Calif.
Midland Paint & Varnish Co., 9115 Rene Ave., Cleveland 5, Ohio
Morris Textile Equipment Corp., 659 Berkeley St., Orange, N. J.
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. ADV. PG. 284.
Resistex—See Morris Textile Equipment Corp.
Rustrem—See Speco Inc.
Sinclair Refining Co., Lubrication Sales Dept., 600 Fifth Ave., New York 20, N. Y.
Steelcote Mfg. Co., 3418 Gratiot St., St. Louis, Mo.
Speco Inr., 7308 Assolate Ave., Cleveland 9, Ohio
Tectyl—See Valvoline Oil Co.
Valvoline Oil Co., Freedom, Pa.
X-Rust—See Valvoline Oil Co.

COT BUFFERS (See Buffers—Cot)

COTS

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa.
ADV. PG. 185.
Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
COLEMAN CO., INC., Greenville, S. C. ADV. PGS. 80, 81.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
SONOCO PRODUCTS CO., Hartsville, S. C.
ADV. PG. 175.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Whitin Machine Works, Whitinsville, Mass.

COTTON CONDENSERS

Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex.
Lummus Cotton Gin Co., Columbus, Ga.
PLATT BROS. & CO. LTD., Aldham, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Whitin Machine Works, Whitinsville, Mass.

COTTON SPINNING FRAMES (See Spinning Frames—Cotton)

COUNTERS—*Cloth-Yardage*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Durant Mfg. Co., 1925 North Buffum St., Milwaukee 1, Wis.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
Productimeters—See Durant Mfg. Co.
Sellers & Co. Ltd., Huddersfield, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Trumeter Co., 1265 Broadway, New York 1, N. Y.
Veedor-Root, Inc., 20 Sargent St., Hartford 2, Conn.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.

COUNTERS—*Electrical*

Veeder-Root, Inc., 20 Sargent St., Hartford 2, Conn.

COUNTERS—*Hank* (See Counters—Yarn-Yardage)

COUNTERS—*Loom-Pick*

Durant Mfg. Co., 1925 North Buffum St., Milwaukee 1, Wis.
Eberly, Inc., John A., Reading, Pa.
Productimeters—See Durant Mfg. Co.
Veeder-Root, Inc., 20 Sargent St., Hartford 2, Conn.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.

COUNTERS—*Operation* (See also Counters—Loom-Pick)

Denominator Co., Inc., The, 261 Broadway, New York, N. Y.
Durant Mfg. Co., 1925 North Buffum St., Milwaukee 1, Wis.
National Acme Co., 170 East 131 St., Cleveland 8, Ohio
Productimeters—See Durant Mfg. Co.
Veeder-Root, Inc., 20 Sargent St., Hartford 2, Conn.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.

COUNTERS—*Thread* (See Glasses—Magnifying)

COUNTERS—*Twist* (See Testers—Twist)

COUNTERS—*Yard-Yardage*

Durant Mfg. Co., 1925 North Buffum St., Milwaukee 1, Wis.
Productimeters—See Durant Mfg. Co.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Veeder-Root, Inc., 20 Sargent St., Hartford 2, Conn.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.
Whitin Machine Works, Whitinsville, Mass.

COUPLING AGENTS

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Flexoid—See Smith Power Transmission Co.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Hydro-Sheave—See Twin Disc Clutch Co.
Hydro-Wynd—See Twin Disc Clutch Co.
Kem Products Co. Inc., 229 High St., Newark, N. J.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Smith Power Transmission Co., 1545 East 23 St., Cleveland 14, Ohio
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Twin Disc Clutch Co., 1328 Racine St., Racine, Wis.

COUPLINGS—*Hydraulic and Shaft*

Airflex—See Falk Corp.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass.
Diamond Chain & Mfg. Co., 402 Kentucky Ave., Indianapolis 7, Ind.
Falk Corp., 3001 West Canal St., Milwaukee, Wis.
Lovejoy Flexible Coupling Co., 5000 West Lake St., Chicago 44, Ill.

Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa.
Steelflex—See Falk Corp.
Thomas Flexible Coupling Co., Warren, Pa.
TWIN DISC CLUTCH CO., 1320 Racine St., Racine, Wis. ADV. PG. 240.
Hydro-Sheave—See Twin Disc Clutch Co.
Hydro-Wynd—See Twin Disc Clutch Co.

COVERING (See Also Cots)

Cork Roll ..... **A**
Leather Roll ..... **B**
Molded Phenolic Roll ..... **C**
Pipe & Boiler ..... **D**
Rubber Roll ..... **E**
Seamless, Card Roll ..... **F**
Take-up Drum ..... **G**

Acme Asbestos Covering & Flooring Co., 1313 Fulton St., Chicago 7, Ill. ..... D
Acme Rubber Mfg. Co., 1938 Lambert St., Trenton, N. J. ..... E
Aetna Felt Co., 204 Centre St., New York 13, N. Y. ..... G
American Wringer Co., 212 Clinton St., Woonsocket, R. I. ..... E
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lawrence, Pa. ..... A, E, G
ADV. PG. 185.
Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ..... B
Carborundum Co., Niagara Falls, N. Y. ..... G
Carotex—See Carolina Rubber Hose Co.
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa. ..... A
Davis—See Textile Laboratories
Ehret Magnesia Mfg. Co., Valley Forge, Pa. ..... D
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J. ..... E
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa. ..... A, B
Keasbey & Mattison Co., Butler Ave., Ambler, Pa. ..... D
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass. C
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio ..... E
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153. ..... E
Mundet Cork Corp., 7101 Tonnelle Ave., North Bergen, N. J. ..... D
Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa. ..... E, G
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J. ..... F
Richardson Co., The, 2698 Lake St., Melrose Park, Ill. C
Noble Co., Roy, New Bedford, Mass. ..... A, B, E, G
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich. ..... E
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass. ..... B, G
Sli-Nat Belting Corp., Box 3061, Greensboro, N. C. ..... D
SONOCO PRODUCTS CO., Hartsville, S. C. ..... A
ADV. PG. 175.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C. C
Staley Mfg. Co., A. E., Decatur, Ill. ..... A
Standard Asbestos Mfg. Co., 860 West Evergreen Ave., Chicago 22, Ill. ..... D
Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls 64, Mass. ..... E
Sure-Grip—See Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh
Textile Laboratories, P. O. Box 1003, Gastonia, N. C. ..... F
Textile Leather & Cement Co., 40 Andrews St., Lowell, Mass. ..... A, B
Thermalite—See Ehret Magnesia Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn. ..... A
Tyer Rubber Co., Andover, Mass. ..... E
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ..... E
ADV. PG. 238.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y. ..... E
Verdun Machine Corp., John, 357 Tenth Ave., Paterson, N. J. ..... E
Warren Belting Co., 33 Arctic St., Worcester 8, Mass. ..... B
Whitin Machine Works, Whitinsville, Mass. ..... A, B

COVERS—*Roll* (See Covering or Cots)

CRABBING MACHINES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Fleet Line—See Riggs & Lombard, Inc.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.

CRADLES—*Cloth* (See Scrays & Cradles—Cloth)

CRANES—*Monorail* (See Hoists—Monorail)

CRANES—*Portable Stacking* (See Trucks—Elevating and Stacking)

CRANES—*Warp-Beam* (See Hoists—Warp-Beam)

CRANK ARMS (See Turnings—Wood)

CRANKSHAFTS—*Loom*

Babbitt Bros. Inc., 10 Water St., Fairhaven, Mass.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.

CRAYONS—*Marking*

Atlantic—See Binney & Smith Co.
BINNEY & SMITH CO., 41 E. 42 St., New York, N. Y.
ADV. PG. 242.
Dixon Crucible Co., Joseph, 167 Wayne St., Jersey City 3, N. J.
Dry-Pens—See Markwell Mfg. Co.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
JIFFY TEXTILE MARKER CO., 406 West School Lane, Philadelphia 44, Pa. ADV. PG. 205.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Lowell Crayon Co., 2 French St., Lowell, Mass.
Markwell Mfg. Co., 200 Hudson St., New York 13, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C.
ADV. PG. 286.
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Soapet—See Walbuck Crayon Co.
Staonal—See Binney & Smith Co.
Walbuck Crayon Co., Andover, Mass.

CREAMS—*Hand*

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Puritan Chemical Co., 916 Ashby St., N.W., Atlanta, Ga.

CREASEPROOFING COMPOUNDS

Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Catalin Corp. of America, 1 Park Ave., New York, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Sq., Philadelphia 5, Pa.
ADV. PG. 273.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

CREASERS

DURRANT & SONS LTD., G., Stockport, England; Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.

CREELS—*Direct-Weaving*

McBRIDE, INC., EDWARD J., Cottman & Wissinoming St., Philadelphia 35, Pa. ADV. PG. 84, 85.

CREELS—*Jack-Spool* (See Spoolers—Jack)

CREELS—*Knitting*

McBRIDE, INC., EDWARD J., Cottman & Wissinoming St., Philadelphia 35, Pa. ADV. PG. 84, 85.

CREELS—*Slasher*

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I.
ADV. PG. 134, 135.

CREELS—*Warper*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass.
ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Fitz Water Wheel Co., Penn St. & P. R. E., Hanover, Pa.
FOSTER MACHINE CO., Westfield, Mass.
ADV. PG. 128, 129.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
McBRIDE, INC., EDWARD J., Cottman & Wissinoming St., Philadelphia 35, Pa. ADV. PG. 84, 85.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.
Schlafhorst & Co., W., M. Gladbach, Germany
Universal Winding Co., P.O. Box 1605, Providence, R. I.

CRESYLIC ACID (See Acids)

CRIMPERS—*Fiber*

Boulgny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
TURBO MACHINE CO., Lansdale, Pa. ADV. PG. 177.

CUPRAMMONIUM RAYON YARNS & FIBERS (See Yarns & Fibers)

CUPRIC & CUPROUS—*Salts of*

Acetate ..... **A**
Chloride ..... **B**
Nitrate ..... **C**
Sulfide ..... **D**

Berk & Co., F. W., Park Place East, Wood-Ridge, Bergen Co., N. J. ..... B
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. ..... A
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C, D
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. A, B, C, D
ADV. PG. 267.

CUT METERS (See Counters—Cloth-Yardage)

CUTTERS—*Belt-Loop*

FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Wiss & Sons, J., 45 Littleton Ave., Newark 7, N. J.

CUTTERS—*Bias* (See Cutters—Cloth)

CUTTERS—*Card* (See Jacquard Card-Cutting Machine)

CUTTERS—*Cloth*

Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Eastman Machine Co., 779 Washington St., Buffalo 3, N. Y.
Fabric Machinery Co. Inc., 307 Center St., Bridgeport, Conn.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Malmin Company, H., 571 Eighth Ave., New York 18, N. Y.

Muller, Franz, M. Gladbach, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Wiss & Sons, J., 45 Littleton Ave., Newark 7, N. J.
Wolf Machine Co., The, Wolf Square at Fowler, Cincinnati 6, Ohio

CUTTERS—*Fiber*

Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Giant—See Taylor-Stiles & Co.
Pacific Converter—See Warner & Swasey Co., The
Rietz Mfg. Co., 150 Todd Rd., Santa Rosa, Cal.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Taylor-Stiles & Co., 15 Bridge St., Riegelsville, N. J.
WARNER & SWASEY CO., THE, 5701 Carnegie Ave., Cleveland 3, Ohio. ADV. PG. 76, 77.
Whitin Machine Works, Whitinsville, Mass.
Wiss & Sons, J., 45 Littleton Avenue, Newark 7, N. J.

CUTTERS—*Flock*

Coes Company, Loring, 74 Coes St., Worcester 3, Mass.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Giant—See Taylor-Stiles & Co.
Rietz Mfg. Co., 150 Todd Rd., Santa Rosa, Calif.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
Taylor-Stiles & Co., 15 Bridge St., Riegelsville, N. J.

CUTTERS—*Looper*

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Ave., Chicago 3, Ill. ADV. PG. 142.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Wiss & Sons, J., 45 Littleton Ave., Newark 7, N. J.

CUTTERS—*Rag* (See Cutters—Flock)

CUTTERS—*Ribbon* (See Cutters—Cloth)

CUTTERS—*Selvage-Loop*

Brewer Machine & Mfg. Co., 4821 North Broadway, St. Louis 7, Mo.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Simonds-Worden-White Co., Summit St. at Negley Pl. Dayton 7, Ohio
Trim-Master—See Ginsberg Machine Co., Inc.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Wiss & Sons, J., 45 Littleton Ave., Newark 7, N. J.

CUTTERS—*Staple* (See Cutters—Fiber)

CUTTERS—*Strip* (See Slitters—Cloth or Cutters—Ribbon)

CUTTERS—*Swatch* (See Pinking Machines)

CUTTERS—*Thread*

BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Brewer Machine & Mfg. Co., 4821 North Broadway, St. Louis 7, Mo.
Bruce Trommer—See Brewer Machine & Mfg. Co.
CRA—See Cutting Room Appliances Corp.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Cutting Roor Appliances Corp., 45 West 25 St., New York 10, N. Y.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Giant—See Taylor-Stiles & Co.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Ridge Tool Co., The, 400 Clark St., Elyria, Ohio
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Taylor-Stiles & Co., 15 Bridge St., Riegelsville, N. J.
Trim-Master—See Ginsberg Machine Co., Inc.
Whitin Machine Works, Whitinsville, Mass.
Wiss & Sons, J., 45 Littleton Avenue, Newark 7, N. J.

CUTTERS—*Velveteen, Pile, etc.*

ALLIED ENGINEERS OF LOWELL, 56 Race St., Lowell, Mass. ADV. PG. 212

CUTTING & FOLDING MACHINES

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Maimin Company, H., 571 Eighth Ave., New York 18, N. Y.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

CUTTING MACHINE—*Stencil*

Marsh Stencil Machine Co., 707 East B St., Belleville, Ill.

CYCLOHEXANOL (Hexalin) (See Solvents)

CYLINDERS (See also Rolls)

CYLINDERS—*Air & Hydraulic* (see Power Units—Hydraulic & Pneumatic)

CYLINDER DRAINING & AIR VENTING SYSTEMS

Sarco Company Inc., 350 Fifth Ave., New York, N. Y.

CYLINDERS—*Heating* (See Cylinders—Slasher)

CYLINDERS—*Picker* (See Lags—Picker)

CYLINDERS—*Slasher*

CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Sucker, G.m.b.H., Gebruder, M. Gladbach/Rhineland, Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Standard Designers, Inc., P. O. Box 6218, Asheville, N. C.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.

CYLINDERS—*Spinning*

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Gastonia Textile Sheet Metal Works, Gastonia, N. C.
Jenkins Metal Shops, Inc., Gastonia, N. C.
Meadows Mfg. Co., Murphy & Astor Aves., S.W., Atlanta, Ga.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Standard Designers, Inc., P. O. Box 6218, Asheville, N. C.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Whitin Machine Works, Whitinsville, Mass.

CYLINDERS—*Spooler* (See Cylinders—Spinning)

CYLINDERS—*Twister-Cylinders and Troughs* (See Cylinders—Spinning)

DABBING BRUSHES (see Brushes—Dabbing)

DAMPENERS—*Cloth* (See Dewing Machines)

DEALERS—*Wool* (See Wool Dealers)

DECAHYDRONAPHTHALENE (See Solvents)

DECALIN (See Solvents)

DECATING MACHINE

Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Kettling & Braun, Germany. Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

DACRON YARNS & FIBERS (See Yarns & Fibers)

DEFOAMING AGENTS (See Antifoaming Agents)

DEGREASING MACHINES (See Scouring Machines—Raw Stock)

DEGUMMING AGENTS

Apex Chemical Co., 225 West 34th St., New York, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFFS CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
National Analine Div. Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nopco Chemical Co., 1st & Esses Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PHILADELPHIA QUARTZ CO., 6th & Chestnut Sts., Philadelphia, Pa. ADV. PG. 284.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. ADV. PG. 272.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

DEGUMMING MACHINES

COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

DEHUMIDIFIERS—*Air*

Aqua-Sorber—See Walton Laboratories, Inc.
Kathabar—See Surface Combustion Corp.
Surface Combustion Corp., Toledo 1, Ohio
Walton Laboratories, Inc., 1186 Grove St., Irvington, N. J.

DELIQUESCENTS (See Hygroscopic Agents)

DELUSTERING AGENTS & ASSISTANTS

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dow Chemical Co., Midland, Mich.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N. Y.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Tex Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

DENATURED ALCOHOL (See Solvents)

DEODORANTS (See Odor-Masking Agents)

DESIZERS—*Cotton or Synthetic* (See Washing Machines)

DESIZING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
National Analine Div. Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PABST SALES CO., INDUSTRIAL PRODUCTS DIV., 221 North La Salle St., Chicago, Ill. ADV. PG. 282.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
Standard Brands, Inc., 595 Madison Ave., New York 22, N. Y.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
WALLERSTEIN CO., INC., TEXTILE DIV., 180 Madison Ave., New York 16, N. Y. ADV. PG. 285.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

DESPECKING MACHINES (See Burling & Despecking Machines)

DE-TACKING MACHINES

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
COOK P-N MACHINE CO., INC., 365 Dorchester, Ave., South Boston 27, Mass. ADV. PG. 143.

DETECTORS—*Hole* (See Stop Motions—Knitting Machine)

DETECTORS—*Uniformity* (See also Testers Yarn Eveness)

Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Standard Electronic Research Corp., 2 East End Ave., New York 21, N. Y.

DETERGENTS (See also Soaps)

Detergents ..... **A**
Dispersing Agents ..... **B**
Dyeing Assistants ..... **C**

Alrose Chemical Co., P. O. Box 1294, Providence, R. I. A, B, C
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa. A, B, C
American Agricultural Chemical Co., 50 Church St., New York 7, N. Y. A, C
American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa. A, C
American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J. A
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. A, B, C
ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y. A, B, C
Arkansas Co., 185 Foundry St., Newark, N. J. A, B, C
Armour & Co., Industrial Soap Dept., 1355 West 31 St., Chicago 9, Ill. A, B, C
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del. A, B, C
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa. A, B, C
Blockson Chemical Co., Joliet, Ill. A, B, C
Bryant Chemical Corp., 6 North St., North Quincy, Mass. A, B, C
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn. A, B, C
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa. B, C
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. A, B, C
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C. A, C
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y. A, B, C
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J. C
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. A, B, C
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y. A, B, C
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. A, B, C
Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio A
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y. A, B, C
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio A
Dolge Co., The C. B., Ferry Lane, Westport, Conn. A
Dow Chemical Co., Midland, Mich. C
du Pont de Nemours & Co., E. I., Explosives Dept., Wilmington 98, Del. A
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. A, B, C
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J. A, B, C
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa. A, B, C
Fuller Brush Co., The, Industrial Div., 3594 Main St., Hartford 2, Conn. A
Geigy Co., Inc., 89 Barclay St., New York N. Y. A, B, C
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y. A, B, C
ADV. PG. 267.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa. A, B, C
Hart Products Corp., 1440 Broadway, New York 18, N. Y. A, B, C
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del. A
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind. A
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa. A, B, C
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa. A, B, C
Kem Products Co., Inc., 229 High St., Newark, N. J. B
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa. B, C
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. A, B, C
ADV. PG. 284.
Magnus Chemical Co., Inc., 180 South Avenue, Garwood, N. J. A
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill. B, C
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. A, B, C
Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga. A
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. A, B, C
ADV. PG. 284.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. A, C
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo. A, B, C
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, B, C
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C. A, B, C
National Analine Div. Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. A, B, C
National Milling & Chemical Co., 4601 Nixon Ave., Philadelphia, Pa. A, B, C
New York Color & Chemical Co., 374 Main St., Belleville, N. J. B, C
Nopco Chemical Co., First & Essex Sts., Harrison, N. J. A, B, C
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y. A, B, C
Oakite Products, Inc., 19 Rector St., New York 6, N. Y. A, B, C
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J. A, B, C
Oronite Chemical Co., 38 Sansome St., San Francisco 4, Calif. A, B
Penetone Co., The, Tenafly, N. J. A, B
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. A, B, C
ADV. PG. 284.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. A, B, C
ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio A, B, C
ADV. PG. 276.

Puritan Chemical Co., 916 Ashby St., N. W., Atlanta, Ga. A
Quaker Chemical Products Corp., Conshohocken, Pa. A, B, C
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y. A
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa. A, B, C
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa. A, B, C
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. A, B, C
ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. A, B, C
ADV. PG. 281.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. B, C
ADV. PG. 272.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y. A, B, C
Scher Bros., 519 Getty Ave., Clifton, N. J. A, B, C
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa. A, B, C
SELIG CO., THE, 336-350 Marietta, N. W., Atlanta, Ga. A
ADV. PG. 282.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga. A, B, C
Sharples Chemicals, Inc., 123 Broad St., Philadelphia 9, Pa. A, B
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. A, C
ADV. PG. 274.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y. A, B, C
Specialty Products Co., 190 Warren St., Jersey City 2, N. J. A
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. A, B, C
ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J. A, B, C
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y. B
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. A, C
ADV. PG. 282.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill. A, B, C
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J. A, B, C
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga. A, B, C
Tesco Chemicals, Inc., P. O. Box 7128, Station C, Atlanta 5, Ga. A
Tex Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J. A, C
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J. A, B, C
Ultra Chemical Works, Inc., 2 Wood St., Paterson 4, N. J. A, B, C
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y. B
Verona Dyestuffs, Springfield Road, Union, N. J. A, B, C
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. C
Watson-Park Co., Ballardvale, Mass. A, C
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. A, B, C
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. A, B, C
ADV. PG. 262, 263.

DE-TWISTING MACHINES

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Kearny Mfg. Co., Inc., 681 Schuyler Ave., Kearny, N. J.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.

DEVELOPERS

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
National Analine Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
PFISTER CHEMICAL WORKS, Ridgefield, N. J.
ADV. PG. 275.

DEWING MACHINES

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Kearny Mfg. Co., Inc., 681 Schuyler Ave., Kearny, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

DEXTRIN

Arabol Mfg. Co., 110 East 42 St., New York 17, N. Y.
CLINTON FOODS INC., Clinton, Iowa
ADV. PG. 288.
CORN PRODUCTS SALES CO., 17 Battery Pl., New York 4, N. Y. ADV. PG. 266.
Anheuser-Busch, Inc., Corn Products Dept., 721 Pestalozzi, St. Louis, Mo.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
LINDER & CO., 296 North Beacon St., Boston 35, Mass.
ADV. PG. 286.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
National Starch Products, Inc., 270 Madison Ave., New York, N. Y.
National Starch Products Inc., 270 Madison Ave., New York 16, N. Y.
Paisley—See Morningstar Nicol, Inc.
Penick & Ford, Ltd., Inc., 420 Lexington Ave., New York 17, N. Y.
Staley Mfg. Co., A. E., Decatur, Ill.
STALEY MFG. CO., A. E., Lock Box 151 A, Decatur, Ill.
ADV. PG. 271.

DEXTROSE (See Glucose)

DIASTASE (See Desizing Agents)

DIBUTYL PHTHALATE (See Solvents)

DICHLOROETHYL ETHER (See Solvents)

DICHLOROMETHANE

Belle Alkali Co., Belle, West Va.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
National Analine Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

DIETHANLAMINE (See Solvents)

DIETHYLENE GLYCOL (See Solvents)

DIETHYLENE GLYCOL ETHYL ETHER (See Solvents)

DIETHYLENEOXIDE (See Solvents)

DIOXAN (See Solvents)

DIPPERS (See Buckets & Dippers—Corrosion-Resistant)

DIPPING MACHINES

Cleaver-Brooks Co., 326 Keefe Ave., Milwaukee 12, Wis.
CLEVELAND CRANE & ENG. CO., Wickliffe, Ohio
ADV. PG. 241.
Hev-E-Oil—See Cleaver-Brooks Co.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.

DIRECT DYES (See Dyes)

DIRECT-FIRED CONVERSION UNITS

RED-RAY MFG. CO., INC., 455 West 45th St., New York 19, N. Y. ADV. PG. 238.
Surface—See Surface Combustion Corp.
Surface Combustion Corp., Toledo 1, Ohio

DISCHARGE-PRINTING AGENTS (See Reducing Agents)

DISKS—Leather (See Packing—Leather & Rawhide)

DISODIUM PHOSPHATE (See Sodium—Salts of—Phosphate, Dibasic)

DISPERSING AGENTS (See Detergents)

DISTRIBUTORS

Belt ..... A
Rake ..... B
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. A, B
ADV. PG. 169.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. A, B
TODD-LONG PICKER APRON CO., Gastonia, N. C. B
ADV. PG. 236.
Whitin Machine Works, Whitinsville, Mass. B

DIVIDERS—*Knitting Machine* (See Sinkers & Dividers)

DOBBY BARS (See Lags)

DOBBY CORDS

Bullard Clark Co., The, E. H. Jacobs Northern Div., Danielson, Conn.
Casteel—See The Bullard Clark Co., E. H. Jacobs Northern Div.

DOBBY HEADS

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.

DOCTOR BLADES

Borg-Warner Corp., Atkins Saw Div., 402 South Illinois St., Indianapolis 9, Ind.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Coes Company, Loring, 74 Coes St., Worcester 3, Mass.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
St Regis Paper Co., Panelyte Div., 230 Park Ave., New York, N. Y.
Silver Steel—See Borg-Warner Corp., Atkins Saw Div., 402 South Illinois St., Indianapolis 9, Ind.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y.
ADV. PG. 155.

DOFFERS (See Garnetts also Cards)

DOLLIES—*Steel, Wood, etc.*

All Steel Welded Truck Corp., 1149 Railroad Ave., Rockford, Ill.
American Pulley Co., The, 4200 Wissahickon Ave., Philadelphia 29, Pa.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Clark Co., George P., Windsor Locks, Conn.
EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.
ADV. PG. 248.
FAIRBANKS CO., THE, 393 Lafayette St., New York 3, N. Y. ADV. PG. 188.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hamilton Caster & Mfg. Co., 1637 Dixie Highway, Hamilton, Ohio
Hunt Loom & Machine Works, Inc., 200 Academy St., Greenville, S. C.
Ironbound Box & Lumber Co., Hillside, N. J.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.

Lewis & Co., J. W., Exchange St., Spartanburg, S. C.
Market Forge Co., 35 Garvey St., Everett Station, Boston 49, Mass.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
NUTTING TRUCK & CASTER CO., Faribault, Minn.
ADV. PG. 226.
Orangeville M'g. Co., Orangeville, Pa.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Service Caster & Truck Corp., 529 North Albion St., Albion, Mich.
Standard Designers, Inc., P. O. Box 6218, Asheville, N. C.
Sunray Company, Camp Croff, Spartansburg, S. C.
Weld-Belt—See West Bend Equipment Corp.
West Bend Equipment Corp., 210 Water St., West Bend, Wis.

DOORS (See Controls—Door or Fire Doors)

DOUBLERS

Cloth ..... **A**
Warp & Splitters ..... **B**
Yarn ..... **C**

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ... A
ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96. ... A, B
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ... A
ADV. PG. 122, 123.
Cutting Room Appliances Corp., 45 West 25 St., New York 10, N. Y. ... A
Fletcher Wks., Inc., Glenwood Ave., & Second St., Philadelphia, Pa. ... C
FOSTER MACHINE CO., Westfield, Mass. ... C
ADV. PG. 128, 129.
HERMAS MACHINE CO., Hawthorne, N. J. ... A
ADV. PG. 165.
ISOTTA FRASCHINI, Milan, Italy—Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242 ... C
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J. ... A
Measuregraph Co., The, 4245 Forest Park Blvd., St. Louis 8, Mo. ... A
Menschner, Rossweiner; Johannes' Mashineu Fabrick A-G, Dulken/Rhld., Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. ... A, B, C
Monforts, A., M. Gladbach/Germany ... A
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ... A
ADV. PG. 192.
TEXTILE SHOPS, Spartanburg, S. C. ... A
ADV. PG. 189.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa. ... C
Universal Winding Co., P. O. Box 1605, Providence, R. I. ... C
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J. ... A
Whitin Machine Works, Whitinsville, Mass. ... C

DOUBLER-TWISTERS (See Throwing Machines)

DRAFTERS—*Pin* (See Pin Drafters & Gill Reducers)

DRAWING FRAMES

Cotton ..... **A**
Worsted ..... **B**

Carniti & Co., A., Officine Fonderie Meccaniche, Tessilli Oggiono, Oggiono Como, Italy ... A
Holdsworth Gill Screw Co., Inc., 55 Sabin St., Pawtucket, R. I. ... B
ISOTTA FRASCHINI, Milan, Italy—Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242 ... B
Medley Mfg. Co., Inc., 400 32nd St., Columbus, Ga. ... A
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ... A
ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ... B
ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ... A, B
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. ... A, B
SANT' ANDREA, Novara, Italy, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ... B
ADV. PG. 117.
Schlumberger & Cie, Guebwiller, France—Represented by Texplant Corp., 65 Bedford St., Stamford, Conn. ... B
Whitin Machine Works, Whitinsville, Mass. ... A

DRAWING-IN MACHINES

Barber-Coleman Co., Rockford, Ill.

DRIVES—*Adjustable-Speed* (See Transmissions—Variable-Speed)

DRIVES—Chain

Baldwin-Rex—See Chain Belt Co.
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Cox Foundry & Machine Co., 395 Cox Ave., S. W., Atlanta, Ga.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Dodge Mfg. Corp., Mishawaka, Ind.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill.
ADV. PG. 83.
Mitcham & Co., Box 271, Gastonia, N. C.
Palmer-Bee Co., Westminster & G. T. R. R., Detroit 2, Mich.
PRECISION GEAR AND MACHINE CO., 2001 North Tryon St., Charlotte, N. C. ADV. PG. 224.
Precision Steel—See Link Belt Co.
Smith & Son, E. E., Gastonia, N. C.
SPEED CONTROL CORP., 1430 East 289 St., Wickliffe, Ohio.
ADV. PG. 230.
United Iron Works Co., Pittsburg, Kan.
Whitin Machine Works, Whitinsville, Mass.

DRIVES—*Enclosed-Gear* (See Reducers—Speed)

DRIVES—*Fluid* (See Drives—Hydraulic)

DRIVES—*Hydraulic*

American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
De Laval Steam Turbine Co., 853 Nottingham Way, Trenton, N. J.
Electrofluid—See Link Belt Co.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Moto-Drive—See Reeves Pulley Co.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis.
Reeves Pulley Co., Columbus, Ind.
TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis. ADV. PG. 240.
Vickers, Inc., 1588 Oakman Blvd., Detroit 22, Mich.

DRIVES—*Loom*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wisc.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville S. C. ADV. PG. 94.
Cox Foundry & Machine Co., 395 Cox Ave., S. W., Atlanta, Ga.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hunt Loom & Machine Works, Inc., 200 Academy St., Greenville, S. C.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

DRIVES—*Portable-Power*

Cleveland Worm & Gear Co., The, 3249 East 80th St., Cleveland 4, Ohio
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Ridge Tool Co., The, 400 Clark St., Elyria, Ohio
Toledo Pipe Threading Machine Co., 1445 Summit St., Toledo 4, Ohio

DRIVES—*V-Belt* (See Belts—V)

DRIVES—*Variable-Speed* (See Transmission—Variable-Speed)

DROP WIRES (See Stop Motions)

DRUMS—*Fiber*

Conolite—See Continental Can Co.
Continental Can Co., 100 East 42 St., New York 17, N. Y.

DRUMS—*Glass*

Corning Glass Works, Corning, N. Y.
Pyrex—See Corning Glass Works

DRUMS—*Metal*

Aluminum Co. of America, New Kensington, Pa.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass.
ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Niles—See Republic Steel Corp.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio
Wolverine Equipment Co., 31 Main St., Cambridge 42, Mass.

DRY CANS (See Cans—Drying)

DRY-CLEANING MACHINES

American Laundry Machy. Co., Cincinnati 12, Ohio
Fleet Line—See Riggs & Lombard, Inc.
H-Jet—See United States Hoffman Machinery Corp.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
United States Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y.
6-B—See Prosperity Co., The
7-A—See Prosperity Co., The

DRYERS—*Apron* (See Dryers—Raw Stock)

DRYERS—*Backwasher*

Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
ISOTTA FRASCHINI, Milan, Italy—Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242 ... C
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 112.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.
ADV. PG. 127.

DRYERS—*Blanket* (See Dryers—Piece Goods)

DRYERS—*Carbonizer*

ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Fleet Line—See Riggs & Lombard, Inc.
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
Hunter Mach. Co., James, North Adams, Mass.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.

Kenyon & Sons, Inc., D. R., Raritan, N. J.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
National Drying Machine Co., Inc., N.E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

DRYERS—*Carpet* (See Dryers—Piece Goods)

DRYERS—*Centrifugal* (See Extractors—Centrifugal)

DRYERS—*Cloth* (See Dryers—Piece Goods)

DRYERS—*High-Frequency or Dielectric*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
Corona Mfg. Corp., 5210 San Fernando Rd., Glendale 3, Calif.
Doyle Co., The J. E., 1224 West Sixth St., Cleveland 13, Ohio
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.

DRYERS—*Hosiery* (See Hosiery-Boarding & Preboarding Machine)

DRYERS—*Infrared-Gas Burners & Lamps*

CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. ADV. PG. 232.
Carbomatic Corp., 70 Bennington Ave., Freeport, N. Y.
Chromolox—See Wiegand Co., Edwin L.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Doyle Co., The J. E., 1220 West 6 St., Clevealnd 13, Ohio
Dritherm—See North American Electric Lamp Co.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Everray—See Fostoria Pressed Steel Corp., The
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
Haas G.m.b.h., Friedrich, Remscheid-Lennep, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Herbert Products Inc., 74-34 Jamaica Ave., Woodhaven, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Miskella Infra-Red Co., East 73rd at Grand Ave., Cleveland 4, Ohio
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
North American Electric Lamp Co., 1014 Tyler St., St. Louis 6, Mo.
Patent-Flex—See Wil-Son Mfg. Co.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
RED-RAY MFG. CO. INC., 455 West 45th St., New York 19, N. Y. ADV. PG. 238.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Sylvania Electric Products, Inc., Fixture Div., 1740 Broadway, New York 19, N. Y.
Triangle Equipment Co. Inc., 45 River Rd., Nutley, N. J.
Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.
Wil-Son Mfg. Co., Cloverport, Ky.

DRYERS—*Knit Goods*

Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Gessner Co., David 41 Fremont St., Worcester 3, Mass.
Greenville Steel & Foundry Co., Spartanburg Rd., Greenville, S. C.
Kenyon & Sons, Inc., D. R., Raritan, N. J.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
McCreary Machine Works, Inc., Cohoes, N. Y.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Monforts, A., M. Gladbach/Germany
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Avenue, Chicago 3, Ill. ADV. PG. 142.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.
Rome Machine & Foundry Co., Rome, Ga.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Teximpex, A. B., Goteborg, Sweden, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y.
Tube-Tex—See Tubular Textile Machinery Corp.
TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. ADV. PG. 145.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

DRYERS—*Piece Goods*

Andrews & Goodrich, Inc., 336 Adams St., Dorchester 22, Mass.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. ADV. PG. 232.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Fleet Line—See Riggs & Lombard, Inc.
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
Haas G.m.b.h., Friedrich, Remscheid-Lennep., Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Hunter Mach. Co., James, North Adams, Mass.
Krantz Sohne, H., Aachen, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Michigan Oven Co., Architects Bldg., 6th Fl., 423 Brainard St., Detroit, Mich.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Rome Machine & Foundry Co., Rome, Ga.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Teximpex, A. B., Goteborg, Sweden, Represented by Ernest L. Frankl Assocs, 515 Madison Ave., New York 22, N. Y.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Uniflow—See Hunter Mach. Co., James
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Vapojet—See Hunter Mach. Co., James
Verduin Machine Corp., John, 357 10th Ave., Paterson, N. J.

DRYERS—*Raw Stock*

ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Hunter Mach. Co., James, North Adams, Mass.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Process Heating, Inc., 48 Herkimer St., Brooklyn 16, N. Y.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.

DRYERS—*Rayon Cake*

AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Haas G.m.b.h., Friedrich, Remscheid-Lennep., Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Thies, B., Coesfeld/Westf., Germany
Venengo Engrg. Co., G. & Lycoming Sts., Philadelphia 24, Pa.

DRYERS—*Skein*

ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
CADGENE MACHINERY CO. INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. ADV. PG. 232.
Haas G.m.b.h., Friedrich, Remscheid-Lennep., Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
Michigan Oven Co., Architects Bldg., Sixth Fl. 423 Brainard St., Detroit, Mich.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PETRIE & McNAUGHT, LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.

DRYERS—*Warp*

ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
Haas G.m.b.h., Friedrich, Remscheid-Lennep, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Michigan Oven Co., Architects Bldg., Sixth Fl., 423 Brainard St., Detroit, Mich.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 15 Maplewood Ave., Maplewood, N. J.
Sucker, G.m.b.H., Gebruder, M. Gladbach/Rhineland, Germany
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Uxbridge Gentle Air—See Griffin & Sons, Ira L.

DRYERS—*Yarn Package*

Abbott Machine Co. Inc., Wilton, N. H.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
ANDREWS & GOODRICH, INC., 336 Adams St., Dorchester 22, Mass. ADV. PG. 82.
Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Haas G.m.b.h., Friedrich, Remscheid-Lennep, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
Morton Machine Works, Columbus, Ga.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PETRIE & McNAUGHT, LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.

PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. ADV. PG. 132, 133.
Thies, B., Coesfeld/Westf., Germany.
Venengo Engrg. Co., G. & Lycoming Sts., Philadelphia 24, Pa.

DUCTS

Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass.
Bahnson Co., The, 1001 South Marshall St., Winston-Salem, N. C.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Carey Mfg. Co., Phillip, Wayne Ave., Cincinnati 15, Ohio
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Chemsteel Construction Co., Inc., 401 Walnut St., Pittsburgh 32, Pa.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga. ADV. PG. 108.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Square D Company, 6060 Rivard St., Detroit 11, Mich.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Union Steel Products Co., Pine & Berrien Sts., Albion, Mich.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.

DULLING AGENTS (See Delustering Agents)

DUSTING MACHINES—*Carbonized Cloth*

PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

DUSTING MACHINES—*Coated Fabric*

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

DUSTING MACHINES—*Cone* (See Dusting Machines—Wool & Waste)

DUSTING MACHINES—*Rag* (See Dusting Machines—Wool & Waste)

DUSTING MACHINES—*Wool & Waste*

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
PETRIE & McNAUGHT, LTD., Rochdale, England, Repr. by R. J. Dealy Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

DYE BECKS (See Dyeing Machines—Piece Goods or Reel)

DYEING ASSISTANTS (See Detergents)

DYEING MACHINES

Beam (See Dyeing Machines—Warp)
Cake (See Dyeing Machines—Package)
High Pressure & Temperature ..... **A**
Indigo ..... **B**
Jig Type ..... **C**
Knit Goods ..... **D**
Package ..... **E**
Padders ..... **F**

DYEING MACHINES *Cont'd.*

Paddle (See Dyeing Machines—Reel)
Piece Goods ..... **G**
Raw Stock ..... **H**
Reel ..... **I**
Skein ..... **J**
Top ..... **K**
Warp ..... **L**
Yarn (See Dyeing Machines—Skein or Package)

Abbott Machine Co. Inc., Wilton, N. H. E, K
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. A, E, H, J ADV. PG. 156.
APPLETON MACHINE CO., 618 South Oneida, Appleton, Wis. F ADV. PG. 126.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. F ADV. PG. 216.
Benteler-Werke, Bielfeld, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. C
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. F, G, I, L ADV. PG. 106.
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J. G, I, J
Burlington Engineering Co., Inc., P. O. Box 471, Graham, N. C. C, E, G, I
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121 B, C, D, F, G, L
CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. G, I ADV. PG. 232.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. F ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96 B, C, F, L
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. F, G, I ADV. PG. 143.
Erick-Gross Corp., 64-72 West Broad St., Bergenfield, N. J. C, G, J
FARMER NORTON & CO., LTD., SIR JAMES, Manchester, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. C, F, G, I, L ADV. PG. 162.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. J ADV. PG. 99.
Fleet Line—See Riggs & Lombard, Inc.
Gaston County Dyeing Mach. Co., Stanley, N. C. C, D, E, H, L
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J. G, I
HALL SONS, AMOS H., Clarkson Ave., East of Front, Philadelphia 20, Pa. D, G ADV. PG. 252.
Hinnekens Machine Co., Inc., 201 Godwin Ave., Paterson 1, N. J. C, D, F, G, I
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. D, F, G, I ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass. B, G, I
Ilma, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. E, G, J
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. D, G, H, I, J ADV. PG. 140.
Krantz, H., Aachen, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. B, C, D, E, F, G, H, I, J, L
Lawrence Pumps Inc., 371 Market St., Lawrence, Mass. H
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. C, F, G, I ADV. PG. 130, 131.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y. D, E, G, H, I, J, L
Mezzera S. p. A., Milan, Italy, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York, N. Y. C, E, G, J
Monforts, A., M. Gladbach/Germany F, G
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J. B, C, F, G, H, I
Morton Machine Works, Columbus, Ga. E, G, H, L
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass. F
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. A, D, F, G, H, I, K ADV. PG. 146.
Rome Machine & Foundry Co., Rome, Ga. D, G, I
SANT' ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. C, E, G, J ADV. PG. 117.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. H ADV. PG. 127.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. B, D, E, H, J ADV. PG. 132, 133.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. G, H, I ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C F, G, I ADV. PG. 189.
Thies, B., Coesfeld/Westf., Germany
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. F, G, I, J ADV. PG. —
Tru-Shade—See Hunt Machine Co., Rodney
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. L ADV. PG. 148.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. D, F, G ADV. PG. 238.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J. C, F, G, I
Venengo Engrg. Co., G. & Lycoming Sts., Philadelphia 24, Pa D, E, G, H
Verduin Machine Corp., John 357 Tenth Ave., Paterson, N. J C, G, I
Werner Machine Co., 183 Autumn St., Passaic, N. J C G, I
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. F, G, I, J, L ADV. PG. 155.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. F ADV. PG. 90.

DYES (See also Lake Colors or Pigments)

Acetate ..... **A**
Acid ..... **B**
Alizarine ..... **C**
Aniline ..... **D**
Basic ..... **E**
Developed ..... **F**
Direct ..... **G**
Mordant ..... **H**
Napthol (Azo; Azoic) ..... **I**
Natural ..... **J**
Sulfur ..... **K**
Vat ..... **L**

American Cynamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y. A, B, C, D, E, F, G, H, I, K, L
American Dyewood Co., 22 East 40th St., New York 16, N. Y. I
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. A, B, C, D, E,
Arnold, Hoffman & Co., Inc., 55 Canal St., Porvidence, ADV. PG. 283. F, G, H, I, K, L
R. I. B, G, I, L
Atlantic Chemical Co., 127 Prospect St., Passaic, N. J. B, D, F, G, I, L
Bernard Color & Chemical Corp., 333 Hudson St., New York 13, N. Y. A, B, C, D, E, F, G, H, I, K, L
Campbell & Co., Inc., John, 75 Hudson St. New York 13 N. Y. A, B, C, D, E, F, G, H, K
CARBIC COLOR & CHEMICAL CO., 451 Washington St., New York, N. Y. A, B, F, G, H, I, L ADV. PG. 277.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C. A
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. A, I
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. A, B, ADV. PG. 258, 259. C, D, E, F, G, H, I, K, L
Dye Specialties Corp., 924 Bergen Ave., Jersey City, N. J. E
Eastman Chemical Products, Inc., Kingsport, Tenn. A
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. C, D, I
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. A, B, C, D, E, F, G, H, I, K, L
Geigy Co., Inc., 89 Barclay St., New York, N. Y. A, B, C, D, E, F, G, H, I, K
Hilton-Davis Chem. Co., 2235 Langdon Farm Rd., Cincinnati, Ohio A, B, D, E, F, H, I
INTERCHEMICAL CORP., TEXTILE COLORS DIV., 150 Wagaraw Rd., Hawthorne, N. J. A, B, G, I ADV. PG. 268, 269.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill. A, B, C, D, E, F, H
MAY, INC., OTTO B., 198 Niagara St., Newark, N. J. ADV. PG. 280. I, L
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. I, L
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. A, B, C, D, E, F, G, H, I, K, L
New York Color & Chemical Co., 374 Main St., Belleville, N. J. B, D, E, G
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y. A, B, C, D, E, F, G, H, I, K, L
Patent Chemicals, Inc., 335 McLean Blvd., Paterson 4, N. J. C
PFISTER CHEMICAL WORKS, Ridgefield, N. J. D, I ADV. PG. 275.
Pharma Chemical Corp., 175 Fifth Ave., New York 10, N. Y. A, B, D, E, F, G, H, I, L
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa. A, B, G, I
Rome Machine & Foundry Co., Rome, Ga. L
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y. A, B, C, D, E, F, G, H, I, K
Verona Dyestuffs, Springfield Road, Union, N. J. A, B, C, D, E, F, G, H, I, K, L

DYESTICKS

Aluminum Co. of America, New Kensington, Pa.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.

KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa.
ADV. PG. 140.
Larson Tool & Stampg. Co., Attleboro, Mass.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Noble Co., Roy, New Bedford, Mass.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

DYESTUFFS (See Dyes)

DYEWOOD EXTRACTS (See Dyes)

DYNAMOS (See Generators—AC & DC)

DYNEL YARNS & FIBERS (See Yarns & Fibers)

EDGING MACHINES (See Sewing Machines)

EGG ALBUMIN

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Stein, Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y.

ELASTIC-YARN KNITTING MACHINES (See Knitting Machine Attachments)

ELECTROMAGNETS—*Separating* (See Separators—Magnetic)

ELEVATORS—*Bobbin* (See Hoists—Bobbin & Quill)

ELEVATORS—*Bucket* (See Conveyors—Apron Belt or Bucket)

ELEVATORS—*Freight & Passenger*

Levelator—See Rotary Lift Co.
Monarch Elevator & Machine Co., Greensboro, N. C.
Oildraulic Elevators—See Rotary Lift Co.
Rotary Lift Co., 1076 Kentucky St., Memphis 2, Tenn.

ELEVATORS—*Portable*

Barrett—See Barrett-Cravens Co.
Barrett-Cravens Co., 4613 South Western Blvd., Chicago 9, Ill.
BUSCHMAN CO., E. W., Clifton & Spring Grove, Cincinnati, Ohio. ADV. PG. 170.
Lewis & Co., J. W., Exchange St., Spartanburg, S. C.
Lifters—See Service Caster & Truck Corp.
Mechanical Handling Systems, Inc., 4600 Nancy Ave., Detroit 12, Mich.
Revolvator Corp., 86th St. at Bergen Turnpike, North Bergen, N. J.
United Iron Works Co., Pittsburg, Kan.
Weld-Bilt—See West Bend Equipment Corp.
West Bend Equipment Corp., 210 Water St., West Bend, Wis.

ELIMINATORS—*Slack-Selvage*

Greenville Belting Co., Bramlett Rd., Greenville, S. C.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PAGE 153.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Trinacria Specialty Mfg. Co., Norwich, Conn.

ELIMINATORS—*Static* (See Static Neutralizers & Eliminators)

EMBOSSING MACHINES (See Calendars)

EMBROIDERING MACHINES

Erick Gross Corp., 64-72 West Broad St., Bergenfield, N. J.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.
Societe Anonyme Adolphe SAUER Arbon, Switzerland.

EMULSIFYING AGENTS & ASSISTANTS (See also Soaps or Lubricants)

American Polymer Corp., 101 Foster St., Peabody, Mass.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.

ENGINEERING SERVICES

Appraisals ..... **A**
Architectural ..... **B**
Cost ..... **C**
Heating ..... **D**
Industrial ..... **E**
Management ..... **F**
Mill Construction ..... **G**
Plant-Site Investigation ..... **H**
Production Control ..... **I**
Research ..... **J**

American Hydrotherm Corp., 33-70 12 St., Long Island City, N. Y. ..... D
Barnes Textile Associates Inc., 10 High St., Boston 10, Mass. ..... A, C, E, F, G, H, I
Ferguson Co., H. K., 19 Rector S., New York 6, N. Y. ..... A B, C, E, G, H, I, K
Field & Associates, E. G., 1101 Hurt Bldg., Atlanta 3, Ga. ..... F
Industrie-Werke Karlsruhe, Karlsruhe, Germany ..... B, G
LOCKWOOD GREENE, 10 Rockefeller Plaza, New York 20, N. Y. ..... A, B, C, E, G, H, I
ADV. PG. 296.
LOPER CO., RALPH E., Wade Hampton Blvd., Greenville, S. C ..... C, E, F, I
ADV. PG. 299
MAIN, INC., CHAS. T., Chamber of Commerce Bldg., 80 Federal St., Boston 10, Mass. ..... A, B, E, G, H
ADV. PG. 300.
McPherson Co., The, P. O. Box 2366, Greenville, S. C ..... A B, C, E, F, G, H, I
Production Engineers Co., 306 Stuart St., Boston 16, Mass. ..... J
ROBERT & CO. ASSOCIATES, Atlanta, Ga. ..... B, E, G
ADV. PG. 2nd Cover.
Sirrine Co., J. E., Greenville, S. C ..... A, B, E, H
Snell, Inc., Foster D., 29 West 15th St., New York, N. Y. ..... E, J
Watson & Hart, 1001 East Bessemer Ave., Greensboro, N. C. ..... A, B, E, H
WERNER TEXTILE CONSULTANTS, 60 E. 42nd St., New York 17, N. Y. ..... C, E, F, I
ADV. PG. 300.

ENVELOPES—*Transparent Paper* (See Paper—Transparent)

ENZYMES (See Desizing Agents)

EPSOM SALTS (See Magnesium—Salts of—Sulfate)

ETHER (See Solvents)

ETHYL ACETATE (See Solvents)

ETHYL ALCOHOL (See Solvents)

ETHYL BENZENE (See Solvents)

ETHYLENE DIAMINE (See Solvents)

ETHYLENE DICHLORIDE (See Solvents)

ETHYLENE GLYCOL (See Solvents)

EXAMINING MACHINES (See Hosiery Examining Forms or Perches or Measuring Machines)

EXHAUSTERS (See Fans—Exhaust & Ventilating)

EXPANDERS—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Hunter Mach. Co., James, North Adams, Mass.
JENKINS SONS, INC., M. W., Cedar Grove, N. J.
ADV. PG. 201.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Whirlaway—See Hunter Mach. Co., James

EXTINGUISHERS—*Portable (Fire)*

Ansul Chemical Co., Fire Extinguisher Div., Marinette, Wis.
Ansul—See Ansul Chemical Co., Fire Extinguisher Div.
Ansul Chemical Co., Marinette, Wis.
Fyr-Fyter Co., The, 221 Crane Ave., Dayton 1, Ohio
GS—See General Scientific Equip. Co.
General Scientific Equip. Co., 2760 West Huntington St., Philadelphia, Pa.
KIDDE & CO., WALTER, 499 Main St., Belleville, N. J.
ADV. PG. 152.
Pyrene Manufacturing Co., 10 Empire St., Newark, N. J.
Snyder & Son Inc., M. L., 1832 E. Boston Ave., Philadelphia 25, Pa.
Stempel—See Snyder & Son Inc., M. L.

EXTRACTORS

Centrifugal ..... **A**
Compression ..... **B**
Pressure ..... **C**
Vacuum ..... **D**

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass. ..... D
American Laundry Machy. Co., Cincinnati 12, Ohio ..... A
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ..... A, D
ADV. PG. 156.
American Tool & Machine Co., 1415 Hyde Park Ave., Boston 36, Mass. ..... A
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ..... B, D
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ..... D
ADV. PG. 106.
Bock Laundry Machine Co., Factories Bldg., Toledo 2, Ohio ..... A
Burlington Engineering Co., Inc., P. O. Box 471, Graham N. C. ..... B, D
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ..... D
ADV. PG. 143
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ..... D
ADV. PG. 122, 123.
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa. ..... A
Gaston County Dyeing Mach. Co., Stanley, N. C. ..... D
Gessner Co., David, 41 Fremont St., Worcester 3, Mass. ..... B, D
Gross, Erick Corp., 64-72 West Broad St., Bergenfield, N. J. ..... A
Haring & Stephens Co., 635 McBride Ave., West Paterson, N. J. ..... A
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J. C
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ..... B
ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass. ..... B
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. C
ADV. PG. 198.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J. ..... A
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ..... D
ADV. PG. 192.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Phialdelphia 20, Pa. ..... B
ADV. PG. 111.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y. ..... A
Scott & Co. Inc., Ernest, 189 Anawan St., Fall River, Mass. ..... D
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ..... A
ADV. PG. 224.
Tube-Tex—See Tubular Textile Machinery Corp.

TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. B
ADV. PG. 145.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J. A, D
Venengo Engrg. Co., G. & Lycoming Sts., Philadelphia 24, Pa. D

EYES—*Pot* (See Pot Eyes or Guides—Thread)

FABRICS—*Mechanical* (See Cloth—Mechanical or Blankets—Endless)

FACTORS—*Textile*

Broadbent & Sons Ltd., Thomas, Huddersfield, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
C. I. T. Corp., 1 Park Ave., New York 16, N. Y.
Coleman & Co., 468 Fourth Ave., New York, N. Y.
Commercial Factors Corp., 2 Park Ave., New York, N. Y.
Dommerich & Co., Inc., 271 Madison Ave., New York 16, N. Y.
Hubshman Factors Corp., 180 Madison Ave., New York 16, N. Y.
Iselin & Co., Inc., William, 357 Fourth Ave., New York 10, N. Y.
Meinhard & Co., Inc., 390 Fourth Ave., New York, N. Y.
PENNSYLVANIA CO., 15th & Chestnut Sts., Philadelphia, Pa. ADV. PG. 292.
Textile Banking Co., Inc., 55 Madison Ave., New York, N. Y.
TRUST COMPANY OF GEORGIA, Atlanta, Ga.
ADV. PG. 299.

FALLERS—*Gill*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
FLEMING, BIRKBY (PINS) LTD., Brighouse, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
GENERAL INDUSTRIES, INC., Putnam, Conn.
ADV. PG. 222.
Holdsworth Gill Screw Co., 55 Sabin St., Pawtucket, R. I.
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.
ISOTTA FRASCHINI, Milan, Italy.—Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SANT' ANDREA, Novara, Italy, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.

FANS

Centrifugal ..... **A**
Exhaust & Ventilating ..... **B**
Pressure ..... **C**
Propeller ..... **D**

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass. A, C
Aerovent Fan Co., Inc., Ash & Brent Sts., Piqua, Ohio B, C, D
Airlift—See Swartwout Company
Allen Co., E. H., 22 Dorrance St., Charleston 29, Mass. A, B
American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich A, B, C, D
American Coolair Corp., 3604 Mayflower Ave., Jacksonville, Fla B
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C B
Bi-Flo—See Aerovent Fan Co., Inc.
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y A, B C, D
Carey Mfg. Co., Phillip, Wayne Ave., Cincinnati 15, Ohio B, D
Carrier Corp., 302 South Geddes St., Syracuse 4, N. Y. A, B
Cen-Tennial Cotton Gin Co., Columbus, Ga B
Chelsea Fan & Blower Co., 639 South St., Plainfield, N. J. B, C, D
Clarage Fan Co., 619 Porter St., Kalamazoo, Mich A, B C, D
Coolair—See American Coolair Corp.
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill A, B, D
De Vilbiss Co., The, 300 Phillips Ave., Toledo 1, Ohio B
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J B, D
ADV. PG. 167.
Electric Blower Co., 352 Atlantic Ave., Boston 10, Mass A, B, C, D
Electrovent Fan & Mfg. Co., 812 West Lake St., Chicago, Ill A, B, C, D
Emerson Electric Mfg. Co., The, 8100 Florisant Ave., St. Louis 21, Mo B, D
Fasco Industries, Inc., 250 Davis St., Rochester 2, N. Y. B, D
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa B
Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex B
Hartzell Propellor Fan Co., 1963 Shroyer Rd., Piqua, Ohio A, B, C, D
Hunter Fan & Ventilating Co., 57 Murray St., New York 7, N. Y. B, C, D
Ilg Elec. Ventilating Co., 2802 North Crawford Ave., Chicago, Ill A, B, C, D
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio B
Joy Mfg. Co., Henry W. Oliver Bldg., Pittsburgh, Pa. B, C
KNOWLTON & NEWTON CO., INC., 545 Broadway, Lowell, Mass. ADV. PG. 247.
Lummus Cotton Gin Co., Columbus, Ga B, C
Macheta—See Aerovent Fan Co., Inc.
Man Coolers—See Perkins & Son, Inc., B. F.
Martin Fan & Blower Co., 4634 West 21 Pl., Chicago 50, Ill A, B, C, D
Marvel—See Electric Blower Co.
Miami Carey—See Phillip Carey Mfg. Co.
Murray Co. of Texas Inc., 177 Harris St., N.W., Atlanta 3, Ga B, D
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass. B
Propellair—See Robbins & Myers, Inc.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J A
ADV. PG. 125. B, C
Reynolds Electric Co., 2650 West Congress St., Chicago, Ill. D
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio B, C, D
Roots-Connersville Blower Div., Dresser Industries, 900 West Mount St., Connersville, Ind A, B
South Bend Air Products Inc., 322 East Colfax Ave., South Bend 22, Ind B, D
Spencer Turbine Co., 484 New Park Ave., Hartford 6, Conn. A
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa. A, C
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio B
United States Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y A, B
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa. A, B, C, D
Whirlout—See Swartwout Company
Wing Mfg. Co., L. J., 138 Vreeland Mills Rd., Linden, N. J B, C, D
Wolverine Equipment Co., 31 Main St., Cambridge 42, Mass. B, D

FASTENERS—*Screws, Nuts, Bolts, etc.*

ALLEN MFG. CO., Drawer 570, Hartford 2, Conn.
ADV. PG. 209.
Flexloc—See Standard Pressed Steel Co.
Miles Co., Franklin S., 2427 North Mascher St., Philadelphia 33, Pa.
Standard Pressed Steel Co., Box 571, Jenkintown, Pa.
Unbrako—See Standard Pressed Steel Co.

FATTY ACIDS— (See Acids—Fatty)

FATTY-ACID ESTERS

Alrose Chemical Co., P. O. Box 1294, Providence, R. I.
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Conjulin—See Woburn Chemical Corp.
Conjusoy—See Woburn Chemical Corp.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Isoline—See Woburn Chemical Corp.
Isostyre—See Woburn Chemical Corp.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
National Analine Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seedine—See Woburn Chemical Corp.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N. J.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

FATTY ALCOHOLS

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.

FATTY-ALCOHOL SULFATES

Alrose Chemical Co., P. O. Box 1294, Providence, R. I.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., St., Philadelphia, Pa. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

FEEDERS—*Blending*

CURLATOR CORP., 501 West Commercial St., East Rochester, N. Y. ADV. PG. 141.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
F-15—See Gastonia Textile Machinery Corp. Inc.
Fiber Meter—See Dodenhoff & Co. Inc., W. D.
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Lummus Cotton Gin Co., Columbus, Ga.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.
Rando—See Curlator Corp.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Salisbury Iron Works, Salisbury, N. C.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.
ADV. PG. 127.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Card*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Chemical*

Accelator—See Infilco, Inc.
American Water Softener Co., SE Cor. Lehigh Ave. & Fourth, Philadelphia 33, Pa.
Bacharach, Inc., E. W., Rialte Bldg., Kansas City, Mo.
Builders-Providence, Inc., Box 1342, Providence, R. I.
Chem-O-Feeder—See Proportioneers, Inc.
Chlor-O-Mite—See Proportioneers, Inc.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Graver Water Conditioning Co., 216 West 14 St., New York 11, N. Y.
Infilco, Inc., 2750 South 12th Ave., Tucson, Ariz.
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
Proportioneers, Inc., 345 Harris Ave., Providence 1, R. I.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.

FEEDERS—*Continuous-Roll*

Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
Krantz Sohne, H., Aachen, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.

FEEDERS—*Dryer* (See Feeders—Raw Stock)

FEEDERS—*Duster, Garnett & Lumper Willow*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Hunter Mach. Co., James, North Adams, Mass.
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PRINCE SMITH & STELLS, LTD., Keighley, England—Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Fearnaught Picker* (See Feeders—Picker)

FEEDERS—*Hopper* (See Feeders—Raw Stock)

FEEDERS—*Intermediate Wool-Card*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
PLATT BROS. & CO. LTD., Oldham, England—Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 115.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Loom-Filling*

A & W Machine Co., P. O. Box 111, Charlton City, Mass.

FEEDERS—*Opener*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
CURLATOR CORP., 501 West Commercial St., East Rochester, N. Y. ADV. PG. 141.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
KIRKMAN & DIXON MACHINERY CO., Greenwood, S. C. ADV. PG. 230.
Lummus Cotton Gin Co., Columbus, Ga.
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PLATT BROS. & CO., LTD., Oldham, England—Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England—Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
Rando—See Curlator Corp.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Salisbury Iron Works, Salisbury, N. C.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Picker*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
KIRKMAN & DIXON MACHINERY CO., Greenwood, S. C. ADV. PG. 230.
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PLATT BROS. & CO. LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Salisbury Iron Works, Salisbury, N. C.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

FEEDERS—*Raw Stock*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Hunter Mach. Co., James, North Adams, Mass.
KIRKMAN & DIXON MACHINERY CO., Greenwood, S. C. ADV. PG. 230.
Krantz Sohne, H., Aachn, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
PETRIE & McNAUGHT LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.

FEEDERS—*Washer* (See Feeders—Raw Stock)

FEELER-MOTIONS—*Loom*

BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Crompton & Knowles Loom Works, 93 Grand St., Worcester 1, Mass.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Geier & Bluhm Inc., 670 River St., Troy, N. Y.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Midget—See Draper Corp.

FELTING MACHINES (See also Mills—Fulling)

Monforts, A., M. Gladbach/Germany
Nordberg Mfg. Co., 3073 South Chase Ave., Milwaukee 1, Wis.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.

FELTS—*Mechanical*

Aetna Felt Co., 204 Centre St., New York 13, N. Y.
American Felt Co., 36 Glenville Rd., Glenville, Conn.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Booth Felt Co. Inc., 436-19th St., Brooklyn, N. Y.
Felters Co., The, 210 South St., Boston 11, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
HUYCK & SONS, F. C., Noone Div., Peterborough, N. H. ADV. PG. 225.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Unisorb—See Felters Co., The
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J.
Molletube—See Philadelphia Felt Co.
Philadelphia Felt Co., 1215 Unity St., Philadelphia 24, Pa.
Philtex—See Philadelphia Felt Co.
Western Felt Works, 4035 Ogden Ave., Chicago 23, Ill.

FENCING—*Chain Link & Iron Picket*

Continental Steel Corp., Kokomo, Ind.
Page Fence Assoc., Monessen, Pa.
STEWART IRON WORKS CO., INC., 1910 Stewart Block, Cincinnati 1, Ohio. ADV. PG. 250.

FERROUS & FERRIC—*Salts of*

Acetate ..... **A**
Chloride ..... **B**
Ferrocyanide ..... **C**
Nitrate ..... **D**
Sulfate ..... **E**

Dow Chemical Co., Midland, Mich.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C, D, E
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y ..... C, E
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y ..... B, D
ADV. PG. 267.
Jordon Company, 51st & Merrimac Ave., Chicago, Ill ..... B
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo ..... B, D, E
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa ..... B
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y C
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga ..... E

FIBRE—*Vulcanized*

Algco—See Auburn Mfg. Co.
Aubeston—See Auburn Mfg. Co.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
Fyberoid—See Wilmington Fibre Specialty Co.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
Ohmoid—See Wilmington Fibre Specialty Co.
SPAULDING FIBRE CO. INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.

FILLERS (See under individual headings; Calcium—Salts of—Carbonate, China Clay, Talc, etc.)

FILLET WINDER (See Winders—Fillet)

FILLETS—*Emery*

Dronsfield Brothers, Limited, Atlas Works, King Street, Oldham, England
Carborundum Co., Niagara Falls, N. Y.
Heaton & Sons Ltd., Hearl Liversedge, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Roy & Son Co., B. S., 775 Southbridge St., Worcester 3, Mass.

FILLING-STRAIGTHENING DEVICES

General Elec. Co., Apparatus Sls. Div.—Bldg. 23, Schenectady, N. Y.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.

FILLING-STRAIGHTENING MACHINES

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

FILTERS—*Air*

Air Maze Corp., 25000 Miles Rd., Cleveland 28, Ohio
AMERICAN AIR FILTER CO., INC., First & Central Aves., Louisville 8, Ky. ADV. PG. 239.
Amplex Mfg. Co., 6501 Harper Ave., Detroit 31, Mich.
Auto-Airmat—See American Air Filter Co., Inc.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Cuno Engineering Corp., 80 South Vine St., Meriden, Conn.
Dollinger Corp., 11 Centre Park, Rochester 4, N. Y.
Electromaze—See Air Maze Corp.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Kleenflo—See Air Maze Corp.
Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo.
M-B Products Co., 46 Victor Ave., Detroit 3, Mich.
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Micro-Kleen—See Cuno Engineering Corp.
Multi-Duty—See American Air Filter Co., Inc.
Norgren Co., C. A., 3400 South Elati St., Englewood, Colo.
Oilite—See Amplex Mfg. Co.
PL-24—See American Air Filter Co., Inc.
Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.

FILTERS—*Edge*

Cuno Engineering Corp., 80 South Vine St., Meriden, Conn.
Micro-Klean—See Cuno Engineering Corp.

FILTERS—*Membrane, Diaphragm, Dialysers*

Rare Chemical Equipment Corp., Madison (Lake County), Ohio

FILTERS—*Pressure & Gravity*

Alsop Engineering Corp., 200 South St., Milldale, Conn.
American Water Softener Co., SE Cor. Lehigh Ave. & Fourth, Philadelphia 33, Pa.
Bacharach, Inc., F. W., Rialto Bldg., Kansas City, Mo.
Blackburn Smith Mfg. Co., 95 River St., Hoboken, N. J.
Brosites Machine Co., 50 Church St., New York, N. Y.
Cuno Engineering Corp., 80 South Vine St., Meriden, Conn.
Dollinger Corp., 11 Centre Park, Rochester 4, N. Y.
Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Ertel Engineering Corp., Kingston 12, N. Y.
Graver Water Conditioning Co., 216 West 14 St., New York 11, N. Y.
Hercules Filter Corp., 204 21st Ave., Paterson, N. J.
Holly Pneumatic Sys. Inc., 15-I-East 40th St., New York 16, N. Y.
Holyoke Machine Co., 505 Main St., Holyoke, Mass.
Infilco, Inc., 2750 South 12th Ave., Tucson, Ariz.
Micro-Kleen—See Cuno Engineering Corp.
Permutit Co., 330 West 42 St., New York 36, N. Y.
Roberts Filter Mfg. Co., 636 Columbia Ave., Darby, Pa.
Shriver & Co., T., 852 Hamilton St., Harrison, N. J.
Stellar—See Infilco, Inc.
U. S. Stoneware Co., The, Akron 9, Ohio
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

FILTERS—*Water* (See Purifiers—Water)

FINANCING (See Factors)

FINISHING AGENTS (See under individual headings; Dextrin, Gums, Starches, Lubricants, etc.)

FINISHING MACHINES (See specific headings for process involved)

FIRE DOORS

Richards-Wilcox Mfg. Co., Third St., Aurora, Ill.

FIRE RESISTANTS (See Flame Retarding Agents)

FITTINGS—*Brass Pipe* (See Fittings—Copper & Brass or Pipe—Brass & Copper)

FITTINGS—*Conduit* (See Conduit & Fittings—Electrical)

FITTINGS—*Copper & Brass*

American Brass Co., The, Waterbury 88, Conn.
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio

FITTINGS—*Corrosion-Resisting*

COOPER ALLOY FOUNDRY CO., THE, Hillside, N. J. ADV. PG. 183.
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio
Potts Co., Horace T., Erie Ave. & D Sts., Philadelphia 34, Pa.
Quikupl—See Cooper Alloy Foundry Co., The
Speedline—See Potts Co., Horace T.
Tri-Clover Machine Co., 2400 60 St., Kenosha, Wis.

FITTINGS—*Hard Rubber* (See Pipe—Hard Rubber)

FITTINGS—*Lead Lined*

Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass.
Resisto Pipe & Valve Co., 262 Bridge St., Cambridge 41, Mass.
Wakefield—See Lead Lined Iron Pipe Co.

FITTINGS—*Malleable-Iron & Steel*

Enduro—See Jefferson Union Co.
Excell—See Jefferson Union Co.
Jefferson Union Co., 601 West 26th St., New York, N. Y.
Kuhns Brothers Co., 1800 McCall St., Dayton 1, Ohio
Master—See Jefferson Union Co.
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio
Taylor Forge & Pipe Works, P. O. Box 485, Chicago 90, Ill.
Tri-Clover Machine Co., 2400 60 St., Kenosha, Wis.
Walseal—See Walworth Co.
Walworth Co., 60 East 42 St., New York 17, N. Y.
Weldelle—See Taylor Forge & Pipe Works

FITTINGS—*Rubber Lined* (See Pipe—Rubber Lined)

FITTINGS—*Stainless Steel* (See Fittings—Corrosion-Resisting)

FITTINGS—*Steel Pipe* (See Fittings—Malleable—Iron & Steel)

FITTINGS—*Tubing* (See Fittings—Copper & Brass)

FIXING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts Jersey City 2, N. J.
Scher Bros., 519 Getty Ave., Clifton, N. J.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

FLAME-RETARDING AGENTS

American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Cheesman-Elliot Co., 639 Kent Ave., Brooklyn 11, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
du Pont de Nemours & Co., Inc., E. I., Pigments Dept., Wilmington 98, Del.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
MONTGOMERY BROS., INC., Penrose & Packer Aves., Philadelphia 45, Pa. ADV. PG. 288.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Treesdale Lab. & Textile Processing Co., Benedum-Trees Bldg., Pittsburgh 22, Pa.
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill.

FLOCKING MACHINES (See Cutters—Flock)

FLOOR CLEANING, SANDING, SCRUBBING & POLISHING MACHINES (See also Cleaners—Portable Industrial Floor Vacuum)

Aristocrat—See Holt Manufacturing Co.
Breuer Electric Mfg. Co., 5100 North Ravenswood Ave., Chicago 40, Ill.
Commodore—See Holt Manufacturing Co.
FINNELL SYSTEM, INC., Elkhart, Ind.
ADV. PG. 179.
Hild Floor Machine Co., 740 West Washington, Chicago, Ill.
Holt Manufacturing Co., 669 20th St., Oakland 12, Calif.
Huntington Laboratories, Inc., Huntington, Ind.
Kent Co. Inc., The, 361 Canal St., Rome, N. Y.
Lawlor Co., S. C., 125 North Aberdeen St., Chicago, Ill.
Lincoln-Schlueter Floor Machinery Co., 1250 West Van Buren St., Chicago 7, Ill.
Master Professional—See Holt Manufacturing Co.
SELIG CO., THE, 336-350 Marietta N.W., Atlanta, Ga.
ADV. PG. 282.
Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.
Scrubber-Vac—See Finnell System, Inc.
Tennant Co., G. H., 2586 North Second St., Minneapolis 11, Minn.
Whirlwind—See Holt Manufacturing Co.

FLOOR MATERIALS

Chemsteel Construction Co., Inc., 401 Walnut St., Pittsburgh 32, Pa.
Devoe & Reynolds Co., Inc., Truscon Laboratories Div., P. O. Box 69, Milwaukee Jct. P. O., Detroit 11, Mich.
Dolge Co., C. B., The, Ferry Lane, Westport, Conn.
Electro-Chemical Eng. & Mfg. Co., 750 Broad St., Emmaus, Pa.
Horn Co., A. C., 10 St. & 44 Ave., Long Island City 1, N. Y.
Huntington Laboratories, Inc., Huntington, Ind.
Johnson & Son, Inc., S. C., 1525 Howe St., Racine, Wis.
Kalman Floor Co., 110 East 42 St., New York, N. Y.
Masury-Young Co., 76 Roland St., Boston 29, Mass.
Midland Paint & Varnish Co., 9115 Rene Ave., Cleveland 5, Ohio
Minnesota Milnng & Mfg. Co., 900 Fauqier Ave., St. Paul 6, Minn.
Momar, Inc., 451 Whitehall St., S.W., Atlanta, Ga.
Monroe Co., Inc., The, 10701 Quebec Ave., Cleveland 6, Ohio
Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.
MYCO—See Masury-Young Co.
Plastic Rock—See United Laboratories
Puritan Chemical Co., 916 Ashby St., N.W., Atlanta, Ga.
Rubber Coat—See Wilbur & Williams Co., The
Saf-T-Flor—See Monroe Co., Inc., The
Safety-Walk—See Minnesota Mining & Mfg. Co.
SELIG CO., THE, 336-350 Marietta N.W., Atlanta, Ga.
ADV. PG. 282.
Skid-Not—See Monroe Co., Inc., The
Stonhard Co., 1306 Spring Garden St., Philadelphia 23, Pa.
Swift Floor—See Monroe Co., Inc., The
Tennant Co., G. H., 2586 North Second St., Minneapolis 11, Minn.
United Laboratories, 16801 Euclid Ave., Cleveland, Ohio
Victory—See Monroe Co., Inc., The
Wilbur & Williams Co., The, 130 Lincoln St., Brighton 35, (Boston) Mass.

FLOORING—*Maple*

Connor Lumber & Land Co., Marshfield, Wis.
Holt Hardwood Co., Oconto, Wis.
Horner Flooring Co., Dollar Bay, Mich.
Ironwood Flooring Co., Ironwood, Mich.
Oval Wood Dish Corp., Tupper Lake, N. Y.
Robbins Flooring Co., Reed City, Mich.
Wells Lumber Co., J. W., Menominee, Mich.

FLY FRAMES (See Roving Frames)

FLYERS

Cotton ..... **A**
Silk, Rayon & Synthetic ..... **B**
Worsted ..... **C**

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy ..... A
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa. ..... B
Dixie Spindle & Flyer Co., 1906 N. Brevard St., Charlotte 2, N. C. ..... A, B, C
HERR MFG. CO., INC., 309 Franklin St., Buffalo 2, N. Y. ..... B
ADV. PG. 187.
McHale Company, M. J., 136 West Market St., Scranton 8, Pa. ..... B
Norlander-Young Machine Co., York Rd., Gastonia, N. C. ..... A, B, C
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haseirck & Co., 211 Congress St., Boston 6, Mass. ..... A
ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. C
ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125. ..... A, B, C
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C. ..... A
Trinacria Specialty Mfg. Co., Norwich, Conn. ..... A, B
Whitin Machine Works, Whitinsville, Mass. ..... A, C

FLYER SPINNING FRAMES (See Spinning Frames—Worsted)

FLY FRAMES (See Roving Frames)

FOG ELIMINATORS

ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Wolverine Equipment Co., 31 Main St., Cambridge 42, Mass.

FOLDERS

Cloth ..... **A**
Warp ..... **B**

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ..... A
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ..... A
ADV. PG. 106.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ..... A, B
ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ..... A, B
ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambirdge St., Worcester 3, Mass. ..... A
ADV. PG. 122, 123.
E. & H.—See Curtis & Marble Machine Co.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y. ..... A
Fleet Line—See Riggs & Lombard, Inc.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass. A
Hall & Jansson Co., 177 Highland St., Worcester, Mass. ..... A
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ..... A
ADV. PG. 86, 87.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Measuregraph Co., The, 4245 Forest Park Blvd., St. Louis 8, Mo. ..... A
Monforts, A., M. Gladbach/Germany ..... A
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J. ..... A
PARKS & WOOLSON MACHINE CO., Springfield, Vt. A
ADV. PG. 192.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ..... A
ADV. PG. 146.
TEXTILE SHOPS, Spartanburg, S. C. ..... A
ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ..... A
ADV. PG. 134, 135.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J. ..... A
Werner Machine Co., 183 Autumn St., Passaic, N. J. A
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ..... A
ADV. PG. 90.

FORMALDEHYDE

Borden Co., The, 350 Madison Ave., New York, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Watson-Park Co., Ballardvale, Mass.

FORMERS—*Cordage* (See Cordage Machines)

FORMIC ACID (See Acids)

FORMS (See Hosiery Forms)

FULL-FASHIONED HOSIERY KNITTING MACHINE (See Knitting Machines—Full-Fashioned Hosiery)

FULLING (See also under individual headings; Pentrants, Wetting Agents, etc.)

Agents ..... **A**
Assistants ..... **B**

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ..... A, B
ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J. A, B
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa ..... A, B
Bryant Chemical Corp., 6 North St., North Quincy, Mass. ..... A, B
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. B
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J ..... A, B
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J ..... A, B
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y ..... A, B
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J ..... A, B
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa ..... B
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa. ..... A, B
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ..... A, B
ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill ..... A, B
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I ..... A, B
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J ..... A, B
ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C ..... A, B
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. ..... A, B
Nopco Chemical Co., First & Essex Sts., Harrison, N. J ..... A, B
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio ..... A, B
ADV. PG. 276.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa ..... A, B
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y. ..... A
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y ..... A
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga. ..... A, B
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J ..... A, B
ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J ..... A, B
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y ..... B
ADV. PG. 282.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J ..... B
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J. ..... A, B
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J ..... A, B

FULLING MACHINES (See Mills—Fulling)

FULLING OILS (See Fulling Agents)

FUMARIC ACID (See Acids)

FUNGICIDES (See Mildew Preventives)

FUR—*Shuttle*

DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Flechner, Inc., A., 143 West 27th St., New York, N. Y.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
MORRIS FUR COMPANY, P. O. Box 816, Burlington, N. C. ADV. PG. 248.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
SNOWISS FUR CO., B., Lock Haven, Pa.
ADV. PG. 254.

FURFURAL (See Solvents)

FURFURYL ALCOHOL (See Solvents)

FURNITURE—*Mill*

COLEMAN CO. INC., Greenville, S. C. ADV. PG. 80, 81.
DoMore Chair Co., Inc., Munger Bldg., Elkhart, Ind.
Hallowell—See Standard Pressed Steel Co.
Standard Pressed Steel Co., Box 571, Jenkintown, Pa.

GARNETT WIRE (See Card Clothing)

GARNETTING MACHINES

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Hunter Mach. Co., James, North Adams, Mass.
Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 116.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Whitin Machine Works, Whitinsville, Mass.

GARNETTING SERVICE (See Commission Services)

GARNETTS—*Sales* (See Tops & Garnetts)

GASKETS (See Packing—Rubber & Fibrous Sheet)

GASSING MACHINES (See Singing Machines)

GATES—*Fence* (See Fencing—Chain Link & Iron Picket)

GAUGES (See Instruments for all types)

GEARMOTORS (See Motors—Gear)

GEARS—*Coiler* (See Gears—Metal Gears & Pinions)

GEARS—*Draft* (See Gears—Metal Gears & Pinions)

GEARS—*Metal Gears and Pinions*

APPLETON MACHINE CO., 618 South Oneida, Appleton, Wis. ADV. PG. 126.
Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Atlanta Textile Machinery Co., 598 Means St., N.W., Atlanta, Ga.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass.
Braun Gear Corp., 239 Richmond St., Brooklyn, N. Y.
Brawny—See Braun Gear Corp.
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Chrysler Corp., Amplex Div., 341 Massachusetts Ave., Detroit 31, Mich.
Cleveland Worm & Gear Co., The, 3249 East 80th St., Cleveland 4, Ohio
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Continental Gin Co., Industrial Div., Birmingham, Ala.
Cox Foundry & Machine Co., 395 Cox Ave., S.W., Atlanta, Ga.
De Laval Steam Turbine Co., 853 Nottingham Way, Trenton, N. J.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Earle Gear & Machine Co., The, 4707 Stenton Ave., Philadelphia 44, Pa.
Falk Corp., 3001 West Canal St., Milwaukee, Wis.
Farrel—See Farrel-Birmingham Co.
Farrel-Birmingham Co., 25 Main St., Ansonia, Conn.
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
Hetherington & Sons, Inc., John, Gastonia, N. C.
Holdsworth Gill Screw Co., 55 Sabin St., Pawtucket, R. I.
KLUTTZ MACHINE & FOUNDRY CO., P. O. Box 71, Gastonia, N. C. ADV. PG. 236.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 283.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Massachusetts Gear & Tool Co., 30 Nashua St., Woburn, Mass.
McKelvie Machine Co., 832-834 North Marietta St., Gastonia, N. C.
Medley Mfg. Co., Inc., 400 32nd St., Columbus, Ga.
Mitcham & Co., Box 271, Gastonia, N. C.
Ohio Gear Co., 1333 East 179th St., Cleveland, Ohio
Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa.
PRECISION GEAR AND MACHINE CO., 2001 North Tryon St., Charlotte, N. C. ADV. PG. 224.
Pyott Foundry & Machine Co., 332 North Sangamon St., Chicago 7, Ill.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Smith & Son, E. E., Gastonia, N. C.
SMITH & SON, INC., JAMES, 982 Southbridge St., Worcester 3, Mass. ADV. PG. 248.
Smith & Smith Inc., 982 Southbridge St., Worcester 3, Mass.
Southern States Equipment Co., Hampton, Ga.
Terry Steam Turbine Co., Terry Square, Hartford, Conn.
Trinacria Specialty Mfg. Co., Norwich, Conn.
United Iron Works Co., Pittsburg, Kans.
Universal Gear Corp., 19th & Martindale Ave., Indianapolis 7, Ind.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Whitin Machine Works, Whitinsville, Mass.

GEARS—*Non-Metallic Gears & Pinions*

Atlanta Textile Machinery Co., 598 Means St. N.W., Atlanta, Ga.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass.
Braun Gear Corp., 239 Richmond St., Brooklyn, N. Y.
Brawny—See Braun Gear Corp.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Cox Foundry & Machine Co., 395 Cox Ave., SW., Atlanta, Ga.
Earle Gear & Machine Co., The, 4707 Stenton Ave., Philadelphia 44, Pa.
Engineered Plastics Inc., Gibsonville, N. C.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
Lignostone—See Techno Exports, Lignostone Dept.
Massachusetts Gear & Tool Co., 30 Nashua St., Woburn, Mass.
McKelvie Machine Co., 832-834 North Marietta St., Gastonia, N. C.
Mitcham & Co., Box 271, Gastonia, N. C.
Ohio Gear Co., 1333 East 179th St., Cleveland, Ohio
Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Southern States Equipment Co., Hampton, Ga.
Synthane Corp., Textile Div., Oaks, Pa.
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Whitin Machine Works, Whitinsville, Mass.

GELATIN

Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Consolidated Chemical Industries, Inc., 111 Sutter St., San Francisco 4, Calif.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-329 Second St., Elizabeth, N. J.
Milligan & Higgins Corp., 222 Front St., New York 38, N. Y.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Peter Cooper Corps., United States Gelatine Div., Gowanda, N. Y.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.

GENERATORS—*AC & DC*

Allis-Chalmers Mfg. Co., 894 S. 70th St., Milwaukee 1, Wis.
Bogue Elec. Mfg. Co., 52 Iowa Ave., Paterson, N. J.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
General Electric Co., Schenectady 5, N. Y.
Janette Electric Mfg. Co., Lehigh at Main, Morton Grove, Ill.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Westinghouse Electric Corp., Pittsburgh, Pa.

GENERATORS—*Chlorine*

Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.

GENERATORS—*Inert-Gas*

Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio

GENERATORS—*Infrared-Heat* (See Dryers—Infrared)

GENERATORS—*Stand-by*

Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.

GENERATORS—*Steam* (See Boilers—Steam)

GERMICIDES (See Antiseptics)

GIGS

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

GILL BOXES

Holdsworth Gill Screw Co., 55 Sabin St., Pawtucket, R. I.
ISOTTA FRASCHINI, Milan, Italy—Repr. by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
Pin Drafter—See Warner & Swasey Co., The
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SANT' ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
Schlumberger & Cie Guebwiller, France—Represented by Texplant Corp., 65 Bedford St., Stamford, Conn.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
WARNER & SWASEY CO., THE, 5701 Carnegie Ave., Cleveland 3, Ohio. ADV. PG. 76, 77.

GILL REDUCER (See Pin Drafter & Gill Reducers)

GLASSES—*Magnifying & Pick*

American Optical Co., Instrument Div., Buffalo 15, N. Y.
Bausch & Lomb Optical Co., 677 St. Paul St., Rochester, N. Y.
Eagles Ltd., Wm., Pendleton, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Edroy Products Co., 480 Lexington Ave., New York 17, N. Y.
G. S.—See General Scientific Equip. Co.
General Scientific Equip Co., 2760 West Huntington St., Philadelphia, Pa.
Magni-Focuser—See Edroy Products Co.
Scherr Co., Inc., George, 200 Lafayette St., New York 12, N. Y.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.

GLASS YARNS & FIBERS (See Yarns & Fibers)

GLAUBER'S SALT (See Sodium—Salts of—Sulfate)

GLUCOSE

Anheuser-Busch, Inc., Corn Products Dept., 721 Pestalozzi, St. Louis, Mo.
CLINTON FOODS INC., Clinton, Iowa ADV. PG. 288.
CORN PRODUCTS SALES CO., 17 Battery Pl., New York 4, N. Y. ADV. PG. 266.

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Penick & Ford, Ltd., Inc., 420 Lexington Ave., New York 17, N. Y.
STALEY MFG. CO., A. E., Lock Box 151 A, Decatur, Ill. ADV. PG. 271.

GLUES (See Adhesives)

GLYCERIN (Glycerol)

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Armour & Co., Chemical Div., 1355 West 31 St., Chicago 9, Ill.
Arnold Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Celina Stearic Acid Co., 410 South Ash St., Celina, Ohio
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Hardesty Co., W. C., Inc. & Century Stearic Acid Products, Inc., 41 East 42 St., New York 17, N. Y.
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.

GOVERNORS—*Pump*

Spencer Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio

GREASES—*Lubricating* (See Lubricants—Oils & Greases)

GRIDS—*Card*

PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Societe Alsacienne de Constructions Mecaniques, Mulhouse, France. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

GRINDERS

Card, Garnett and Napper ..... A
Drum ..... B
Indigo C
Picker ..... D
Roll ..... E
Shear ..... F
Traverse ..... G

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. E
ADV. PG. 185.
BAGSHAW CO., W. A., Mill 5-Pine St., Nashua, N. H. D
ADV. PG. 160.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. F
ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. A
ADV. PG. 172.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio E
DRONSFIELD BROTHERS, LTD., Oldham, England. Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. A
ADV. PG. 162.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa. F, G
Fitzpatrick Co., W. J., 1001 West Washington Blvd., Chicago, Ill. B, C
Hetherington & Sons, Inc., John, Gastonia, N. C. A, B, G
Monforts, A., M. Gladbach/Germany A, F
PARKS & WOOLSON MACHINE CO., Springfield, Vt. F
ADV. PG. 192.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Roy & Son Co., B. S., 775 Southbridge St., Worcester 1, Mass. A, B, D, E, G
Whitin Machine Works, Whitinsville, Mass. A, G

GUIDERS & GUIDES—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
Askania Regulator Co., 240 East Ontario, Chicago, Ill.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
Carolina Rubber Hose Co., Salisbury, N. C.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DURRANT & SONS, LTD., G, Stocport, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston Mass. ADV. PG. 162.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
GUIDER SPECIALTY CO., THE, 425 West Rock Ave., New Haven 15, Conn. ADV. PG. 210.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
National Drying Machine Co., Inc., N.E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.
Windle Machine Works, North Grafton, Mass.

GUIDES—*Fiber-Knife*

BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.

GUIDES—*Pigtail* (See Guides—Thread)

GUIDES—*Roving & Sliver*

AMERICAN LAVA CORP., Manufacturers Rd., Chattanooga 5, Tenn. ADV. PG. 91.
GLADWIN PLASTICS CO., 275 Houston St., N.E., Atlanta, Ga. ADV. PG. 250.
PAGE-MADDEN CO., Second St., Mineola, N. Y.
ADV. PG. 78, 79.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Whitin Machine Works, Whitinsville, Mass.

GUIDES—*Selvage Uncurling*

Guider, Roll & Serv. Co., P. O. Box 3747, Peninsula Sta., Daytona Beach, Fla.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.

GUIDES—*Spooler* (See Guides—Thread)

GUIDES—*Tenter-Clip Rail*

Askania Regulator Co., 240 East Ontario, Chicago 11, Ill.
Blake Elec. Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Schwartz—See Blake Elec. Mfg. Co.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

GUIDES—*Thread*

AMERICAN LAVA CORP., Manufacturers Rd., Chattanooga 5, Tenn. ADV. PG. 91.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa.
Corning Glass Works, Corning, N. Y.
Durescor—See Collins Supply & Equipment Co.
General Electric Co., Carboloy Dept., Box 237, Roosevelt Park PO, Detroit, Mich.
Heanium—See Heany Industrial Ceramics Corp.
HEANY INDUSTRIAL CERAMICS CORP., 915 Whitney Ave., New Haven, Conn. ADV. PG. 138, 139.
INDUSTRIAL SAPPHIRE CO., P. O. Box 422, Quakertown, Pa. ADV. PG. 206.
Irridior—See Collins Supply & Equipment Co.
Ives Co., Loyal T., 19 Water St., New Brunswick, N. J.
Kanoy & Sons Mach. Co., 4111 Thrift Rd., Charlotte, N. C.
Lambertville Ceramic & Mfg. Co. Inc., Lambertville, N. J.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
McHale Company, M. J., 136 West Market St., Scranton 8, Pa.
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J.
MITCHELL-BISSELL CO., Brunswick & Heil Aves., P. O. Box 250, Trenton 2, N. J. ADV. PG. 215
PAGE-MADDEN CO., Second St., Mineola, N. Y.
ADV. PG. 78, 79.
PLASTIC INDUSTRIES, INC., Athens, Tenn.
ADV. PG. 168.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Plutte Koecke, Wuppertal-Barmen, Germany—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congerss St., Boston 6, Mass. ADV. PG. 119.
Shipman Supply Co., Front & Reagan Sts., Sunbury, Pa.
Smith & Son, E. E., Gastonia, N. C.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Whitin Machine Works, Whitinsville, Mass.

GUIDES—*Yarn* (See Guides—Thread)

GUMS

Arabic ..... A
British ..... B
Carob C
Cellulose ..... D
Karaya ..... E
Senegal ..... F
Synthetic ..... G
Tragacanth ..... H
Vegetable I

Anheuser-Busch, Inc., Corn Products Dept., 721 Pestalozzi, St. Louis, Mo. I
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I. A, H
Bryant Chemical Corp., 6 North St., North Quincy, Mass. A, B, C, E, F, I
Clearfilm—See National Starch Products Inc.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. A, B, C, H
CORN PRODUCTS SALES CO., 17 Battery Place, New York 4, N. Y. B
ADV. PG. 266.
Dow Chemical Co., Midland, Mich. G
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, H
Emhay Chemical Co., 319-325 Second St., Elizabeth, N. J. A, I
Fibertex—See National Starch Products Inc.
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del. D
Kem Products Co., Inc., 229 High St. Newark, N. J. C
LINDER & CO., 296 North Beacon St., Boston 35, Mass. C
ADV. PG. 286.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. A
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. A, H, I
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y. A, B, C, E, F, H, I
National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y. B, I
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J. A, E, H
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. H
ADV. PG. 286.
SIDDALL CO., GEORGE F., Spartanburg, S. C. H, I
ADV. PG. 286.
Stein, Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y. A, B, E, H
Thurston & Braidich, 286 Spring St., New York 13, N. Y. A, C, E, F, H
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. A, C, E, H, I

GYPSUM (See Calcium—Salts of—Sulfate)

GYRATORS—*Cotton*

Lummus Cotton Gin Co., Columbus, Ga.

HAIR-PROCESSING MACHINERY

Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Holdsworth Gill Screw Co. Inc., 55 Sabin St., Pawtucket, R. I.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

HAMPERS (See Baskets—Canvas)

HANGERS—*Shaft* (See Blocks—Hanger & Pillow)

HANK CLOCKS (See Counters—Yarn-Yardage)

HANK COUNTERS (See Counters—Yarn-Yardage)

HANKING MACHINES—*Narrow Fabric* (See also Winders—Skein)

HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.

HARNESS ADJUSTERS

Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.

HARNESS FRAMES & HEDDLES

Andrews Co., 189 Charles St., Spartanburg, S. C.
Emmons Loom Harness Co., 7 May St., Lawrence, Mass.
Felton & Guilleaume Carlswerk, A. G., Koeln-Muelheim, Germany, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York, N. Y.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Pioneer Heddle & Reed Co., 1378 Murphy Ave., S. W., Atlanta, Ga.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.

HEADS—*Balling* (See Balling Heads)

HEADS—*Beam* (See Beams & Beam Heads)

HEADS—*Cylinder*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Jenkins Metal Shops, Inc., Gastonia, N. C.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Smith & Son, E. E., Gastonia, N. C.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
Southern States Equipment Co., Hampton, Ga.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Whitin Machine Works, Whitinsville, Mass.

HEADS—*Dobby* (See Dobby Heads)

HEADS—*Jacquard* (See Jacquard Heads)

HEADS—*Spray* (See Nozzles—Spray)

HEADS—*Worsted Balling* (See Balling Heads)

HEAT EXCHANGERS

Downingtown Iron Works Inc., Downington, Pa.
Haveg Corp., Newark, Del.
Kewanee-Ross Corp., 1407 West Ave., Buffalo 13, N. Y.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C.
National Cylinder Gas Co., The Girdler Co. Div., 224 East Broadway, Louisville, Ky.
Union Iron Works, 15 & Cascade Sts., Erie, Pa.
National Carbon Co. Div., Union Carbine & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Votator—See National Cylinder Gas Co.

HEATERS—*(See Also Dryers)*

HEATERS—*Feed Water*

Blackburn Smith Mfg. Co., 95 River St., Hoboken, N. J.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Foster Wheeler Corp., 165 Broadway, New York, N. Y.
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich.
Kewanee-Ross Corp., 1407 West Ave., Buffalo 13, N. Y.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C.
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa.
Superior Combustion Industries, Inc., Times Tower, Times Square, New York 18, N. Y.
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio
Tranter Mfg. Inc., 735 East Hazel St., Lansing, Mich.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

HEATERS—*High-Frequency* (See Dryers—High-Frequency or Infrared)

HEATERS—UNIT

American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Cherry-Burrell Corp., 427 West Randolph St., Chicago 6, Ill.
Chromalox—See Wiegand Co., Edwin L.
Clarage Fan Co., 619 Porter St., Kalamazoo, Mich.
Clario—See Clarage Fan Co.
Down Flow—See McQuay Inc.
Doyle Co., The, J. E., 1220 West 6 St., Cleveland 13, Ohio
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
G E—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Grinnell Co. Inc., 260 West Exchange St., Providence, R. I.
Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I.
Hartzell Propeller Fan Co. Div., Castle Hills Corp., P. O. Box 909, Piqua, Ohio
Herbert Products Inc., 74-34 Jamaica Ave., Woodhaven, N. Y.
Ilo Elec. Ventilating Co., 2802 North Crawford Ave., Chicago, Ill.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.
Janitrol—See Surface Combustion Corp.
Marlo Coil Co., 6135 Manchester Ave., St. Louis 1, Mo.
McQuay, Inc., 1600 Broadway, N. E., Minneapolis 13, Minn.
Miskella Infra-Red Co., East 73rd at Grand Ave., Cleveland 4, Ohio
Modine Mfg. Co., 1708 Racine St., Racine, Wis.
National Carbon Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Surface Combustion Corp., Toledo 1, Ohio
Thermolier—See Grinnell Co. Inc.
Trane Co., Refrigeration Dept., 2nd & Cameron, La Crosse, Wis.
Unitherm—See Clarage Fan Co.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.
Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.
Wing Mfg. Co., L. J., 138 Vreeland Mills Rd., Linden N. J.
Young Radiator Co., 709 Marquette St., Racine, Wis.

HEATERS—*Water*

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Chromalox—See Wiegand Co., Edwin L.
Finnigan Co. Inc., J. J., 455 Means St., N. W., Atlanta, Ga.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
G E—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich.
Infra-Radiator—See Fisher Scientific Co.
JOHNSON CORP., THE, Three Rivers, Mich. ADV. PG. 253.
Kewanee-Ross Corp., 1407 West Ave., Buffalo 13, N. Y.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C.
PICK MANUFACTURING CO., West Bend, Wis. ADV. PG. 250.
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa.
Superior Combustion Industries, Inc., Times Tower, Times Square, New York 18, N. Y.
Tabasco—See Kewanee-Ross Corp.
Tranter Mfg. Inc., 735 East Hazel St., Lansing, Mich.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.
Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.

HEDDLE-REPAIR

Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
Pioneer Heddle & Reed Co., 1378 Murphy Ave., S. W., Atlanta, Ga.
Stehedco—See Steel Heddle Mfg. Co.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

HEDDLES (See Harness Frames & Heddles)

HEMMING MACHINES (See Sewing Machines)

HEXALIN (See Solvents)

HOISTS

Bobbin & Quill ..... A
Chain Block (See Hoists—Hand Chain)
Electric Cable ..... B
Hand Chain C
Monorail ..... D
Pneumatic Chain ..... E
Warp-Beam ..... F

Abbott Machine Co. Inc., Wilton, N. H. ..... A
American Chain & Cable Co., Inc., Wright Hoist Div., York, Pa. ..... C, D
American Engineering Co., Armaingo Ave. & Cumberland St., Philadelphia 25, Pa. ..... B, D
American Monorail Co., 13107 Athens Ave., Cleveland, Ohio ..... D
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. ..... E
CLEVELAND CRANE & ENG. CO., Wickliffe, Ohio B, C, D ADV. PG. 241.
Coffing Hoist Co., 800 Walter St., Danville, Ill. C
COLEMAN CO., INC., Greenville, S. C. ..... C ADV. PG. 80, 81.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp., 6071 Fremont Ave., Tonawanda, N. Y. B, C, D
Conco Engineering Wks., Crane & Hoist Div., Mendota, Ill. ..... B, C, D
Curtis Manufacturing Co., Refrigerating Machine Div., 1992 Kienlen Ave., St. Louis 20, Mo. ..... E
Cyclone—See Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C. ..... B, D
Gardner-Denver Co., Quincy, Ill. ..... E
Harrington Co., 17th & Callowhill Sts., Philadelphia, Pa. ..... C, D
Hoist-All—See Coffing Hoist Co.
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. E
Lewis & Co., J. W., Exchange St., Spartanburg, S. C. F
Liftabout Jr.—See Shepard Niles Crane & Hoist Corp.
Lo-head—See American Engineering Co.
Louden Machinery Co., The, 607 Broadway, Fairfield, Iowa ..... D
Meteor—See Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Monarch Elevator & Machine Co., Greensboro, N. C. A, F
National Screw & Mfg. Co., Chester Hoist Div., Lisbon, Ohio ..... B, C, D
Reading Crane & Hoist Corp., 2100 Adams Ave., Reading, Pa. ..... B, C, D
Robbins & Myers, Inc., 1930 Clark Blvd., Springfield, Ohio ..... B, C, D
Round & Son, David, P. O. Box 883, Cleveland 22, Ohio ..... B, C, D

Shepard Niles Crane & Hoist Corp., Montour Falls, N. Y. B, C, D
Union Manufacturing Co., 296 Church St., New Britain, Conn. C
Universal Gear Corp., 19th & Martindale Ave., Indianapolis, 7, Ind. B
Yale & Towne Mfg. Co., The, Philadelphia 15, Pa. B, C, D

HOLDERS—Bobbin

Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Eclipse Machine Div., Bendix Aviation Corp., Elmira, N. Y.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV.PG. 199.
Roney & Rae Co., 159 Green St., Woonsocket, R. I.
STERLING ENGINEERING & MFG. CO., 173 Gilligan St., Wilkes Barre, Pa. ADV. PG. 229.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
WEST SIDE FOUNDRY CO., 2 South Hanks St., Rome, Ga. ADV. PG. 216.
Whitin Machine Works, Whitinsville, Mass.

HOLDERS—*Cone* (See Holders—Bobbin)

HOLDERS—*Cop* (See Holders—Bobbin)

HOLDERS—*Rayon-Cake*

Formica Co., 4614 Spring Grove Ave., Cincinnati, Ohio
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes-Barre, Pa. ADV. PG. 229.
Synthane Corp., Textile Div., Oaks, Pa.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
WEST SIDE FOUNDRY CO., 2 South Hanks St., Rome, Ga. ADV. PG. 216.

HOLDERS—*Ring* (See Rings—Spinning & Twister)

HOMOGENIZERS (See also Mills—Colloid)

American Marsh Pumps, Inc., 60 Capital Ave., Battle Creek, Mich.
CHEMICOLLOID LABORATORIES, INC., 30 Church St., New York 7, N. Y. ADV. PG. 104.
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill.
Creamery Package Mfg. Co., The, 1243 West Washington Blvd., Chicago 7, Ill.
Flow-Master—See Marco Co.
Homo Vitor—See American Marsh Pumps Inc.
Manton Gaulin Mfg. Co., Inc., 44 Garden St., Everett 49, Mass.
Marco Co., 14 Third St., Wilmington 50, Del.
Scott & Williams, Inc., 350 Fifth Ave., New York 1, N. Y.

HOODS—*Fume & Vapor*

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Atlas Mineral Prods. Co., Mertztown, Pa.
Bahnson Co., The, 1001 South Marshall St., Winston-Salem, N. C.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Haveg Corp., Newark, Del.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
KNOWLTON & NEWTON CO., INC., 545 Broadway, Lowell, Mass. ADV. PG. 247.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Plastalory—See Atlas Mineral Prods. Co.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Wolverine Equipment Co., 31 Main St., Cambridge 42, Mass.

HOOKS—*Harness, Reed & Shuttle*

Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
PAGE-MADDEN CO., INC., 76-96 Second St., Mineola, N. Y. ADV. PG. 78, 79.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Southern Loom Reed Mfg. Co., Gaffney, S. C.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.

HOOKS—*Mending*

Royersford Needle Works, Inc., Royersford, Pa.

HOOKS—*Sinker* (See Sinkers & Dividers)

HOOKS—*Welt*

Hofmann & Co., Alfred, 635 59th St., West New York, N. J.
Royersford Needle Works, Inc., Royersford, Pa.

HOPPERS—*Bobbin*

Sunray Company, Camp Croff, Spartansburg, S. C.

HOSE—*Air & Water*

Acme Rubber Mfg. Co., 1938 Lambert St., Trenton, N. J.
Arno—See Cincinnati Rubber Mfg. Co.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass.
Carlyle Rubber Co., 64 Park Pl., New York 7, N. Y.
De Vilbiss Co., The, 300 Phillips Ave., Toledo 1, Ohio
Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo.
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.
Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood, Cincinnati 12, Ohio
Concord-Vim—See Boston Woven Hose & Rubber Co.
Gates Rubber Co., The, 999 S. Broadway, Denver 17, Colo.
Goodall Rubber Co., 431 Whitehead Rd., Trenton 4, N. J.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J.
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio
Losani—See Cincinnati Rubber Mfg. Co.
Maltese Cross—See Hewitt Robins Inc., Rubber Div.
New York Belting & Packing Co., One Market St., Passaic, N. J.
Quaker Rubber Corp. Div., H. K. Porter Co., Inc., of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
Thermoid Corp., Whitehead Rd., Trenton 6, N. J.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

HOSIERY BOARDING & PREBOARDING MACHINES

American Sterilizer Co., Erie, Pa.
Duomold—See Paramount Textile Machinery Co.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Ave., Chicago 3, Ill. ADV. PG. 142.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. ADV. PG. 132, 133.
TURBO MACHINE CO., Lansdale, Pa. ADV. PG. 177.

HOSIERY DRYING FORMS

INDUSTRIAL DRYER CORP., 432 Fairfield Ave., Stamford, Conn. ADV. PG. 210.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Paraflex—See Paramount Textile Machinery Co.
Paramold—See Paramount Textile Machinery Co.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Ave., Chicago 3, Ill. ADV. PG. 142.
PHILADELPHIA METAL DRYING FORM CO., 4550 Torresdale Ave., Philadelphia 24, Pa. ADV. PG. 166.

HOSIERY EXAMINING FORMS

Berks Engineering Co., 6th & Chestnut Sts., Reading, Pa.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Ave., Chicago 3, Ill. ADV. PG. 142.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Southern Textile Machinery Co., 2nd & Norton Sts., Paducah, Ky.
Synthane Corp., Textile Div., Oaks, Pa.

HUMIDIFIERS—*Room* (See also Air Conditioners)

AIR-PERME-ATOR MFG. CO., 300-2 Preakness Ave., Paterson 2, N. J. ADV. PG. 243.
Amco—See American Moistening Co.
AMERICAN MOISTENING CO., 260 West Exchange St., Providence, R. I. ADV. PG. 102.
Armstrong Machine Works, Three Rivers, Mich.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Bauer Thermometer Co., 332 West 21 St., New York 11, N. Y.
Carrier Corp., 302 South Geddes St., Syracuse 4, N. Y.
Centrifugal Humidifier—See Bahnson Co., The
Curtis Mfg. Co., Pneumatic Machinery Div., 1905 Kienlen Ave., St. Louis 20, Mo.
JACKSON MOISTENING CO., Rockwell Ave., Centerdale, 11, R. I. ADV. PG. 204.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.
Parks-Cramer Co., Fitchburg, Mass.
RIHCO—See R. I. Humidifier & Ventilating Co.
R. I. HUMIDIFIER & VENTILATING CO., 99 Chauncy St., Boston 11, Mass. ADV. PG. 214.
Southworth Machine Co., 30 Warren Ave., Portland 2, Me.
Soraco—See Spray Engineering Co.
Spray Engineering Co., 114 Central St., Somerville 45, Mass.
Standard Engineering Works, 289 Roosevelt Ave., Pawtucket, R. I.
Walton Laboratories, Inc., 1186 Grove St., Irvington, N. J.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

HUMIDIFYING CABINETS (See Cabinets—Humidifying)

HYDRAULIC POWER UNITS (See Power Units—Hydraulic & Pneumatic)

HYDROCHLORIC ACID (See Acids)

HYDROGEN PEROXIDE

Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J.
BECCO SALES CORP., River Road & Sewyer St., Buffalo, N. Y. ADV. PG. 265.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa.
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 287.

HYDROMETERS (See Instruments)

HYGROMETERS (See Controls—Humidity or Instruments—Humidity, Indicating & Recording or Instruments—Wet-Bulb Hygrometers)

HYGROSCOPIC AGENTS

Armour & Co., Chemical Div., 1355 West 31 St., Chicago 9, Ill.
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.

Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Warwick Chemical Co., Div. Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

IMPREGNATING MACHINES

American Sterilizer Co., Erie, Pa.
ARLINGTON MACHINE WORKS DIV. AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
CADGENE MACHINERY CO., INC., Fifth Ave. & McLean Blvd., Paterson 4, N. J. ADV. PG. 232
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Stokes Machine Co., 6018 Tabor Rd., Philadelphia 20, Pa.
Tube-Tex—See Tubular Textile Machinery Corp.
TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. ADV. PG. 145.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

INDICATORS (See Instruments for all Types)

INFRARED BURNERS (See Dryers—Infrared)

INHIBITORS—*Gas-Fading*

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co., Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshocken, Pa.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

INKS & MARKING COMPOUNDS—*Stamping & Indelible*

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
JIFFY TEXTILE MARKER CO., 406 West School Lane, Philadelphia 44, Pa. ADV. PG. 205.
Kemco—See Markem Machine Co.
Markem Machine Co., 150 Congress St., Keene, N. H.
Marsh Stencil Machine Co., 707 East B St., Belleville, Ill.
NISSEN, JR. CO., JOHN P., P. O. Box 888, Glenside, Pa. ADV. PG. 213.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Sinclair & Valentine Co., 611 West 129th St., New York 27, N. Y.
Sinvaltex——See Sinclair & Valentine Co.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

INSPECTION MACHINES (See Perches)

INSTRUMENTS

Color Measurement ..... A
Gas or Air Meter ..... B
Humidity, Indicating & Recording C
Hydrometer ..... D
Liquid-Density & Proportioning ..... E
Liquid-Flow, Indicating & Recording ..... F
Liquid-Level, Indicating & Recording ..... G
Machine-Stoppage Recorder ..... H
Moisture-Content Gauge I
Needle Gauge ..... J
Pile Gauge ..... K
pH Indicator L
Pressure & Vacuum, Indicating & Recording ..... M
Static Indicator ..... N
Steam-Flow Meter ..... O
Temperature, Indicating & Recording ..... P
Vibration Measurement ..... Q
Wet-Bulb Hygrometer ..... R

American—See Manning & Maxwell & Moore, Inc.
American—See Buffalo Meter Co.
Analytical Measurements, Inc., 585 Main St., Chatham, N. J. L
Anemostat Corp. of Amer., 10 East 39th St., New York 16, N. Y. ..... B
Ashcroft—See Manning & Maxwell & Moore, Inc.
Auto-Lite—See Electric Auto Lite Co.
Autronic—See Swartwout Company
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio ..... B, F, G, L, M, P
Barber-Colman Co., Rockford, Ill. ..... C, G, P
Bauer Thermometer Co., 332 West 21 St., New York 11, N. Y. ..... H, P, R
Beckman Instruments, Inc., 820 Mission St., South Pasadena 1, Calif. L
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn. ..... C, F, G, L, M, P, R
Buffalo Meter Co., 2917 Main St., Buffalo, N. Y. ..... F
Builders-Providence, Inc., Box 1342, Providence, R. I. ..... F, G
Cambridge Instrument Co., 3049 Grand Central Terminal, New York 17, N. Y. ..... C, L
Central Scientific Co., 1700 West Irving Park Rd., Chicago 13, Ill. ..... I, L, M
Centralograph—See Ericsson Telephone Sales Corp.
Cherry-Burrell Corp., 427 West Randolph St., Chicago 6, Ill. ..... G
Coleman Instruments Inc., 310 Madison St., Maywood, Ill. L
Colorede—See Instrument Devel. Labs. Inc.
Diamond Power Specialty Corp., P. O. Box 415, Lancaster, Ohio ..... G
Durac—See H. B. Instrument Co.
Electric Auto Lite Co., Instrument & Gauge Div., Toledo 1, Ohio ..... M, P
Ericsson Telephone Sales Corp., 100 Park Ave., New York 17, N. Y. ..... H
Esterline-Angus Co., P. O. Box 596, Indianapolis 6, Ind. ..... M
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa. L
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa. ..... C, F, G, M, P, R
Foster Engineering Co., 835 Lehigh Ave., Union, N. J. ..... F
Foxboro Co., Inc., Foxboro, Mass. ..... B, C, E, F, G, I, L, M, P, R
Freas Glass Works, 146 East Ninth Ave., Conshohocken, Pa. ..... P
GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass. ..... Q
ADV. PG. 245.
General Scientific Equip. Co., 2760 West Huntingdon St., Philadelphia, Pa. ..... R
Hagan Corp., Hagan Bldg., Pittsburgh, Pa. ..... B, E, F, G, M, O, P
HART-MOISTURE METERS, Grand Central Terminal, Rm. 1948, New York 17, N. Y. I
ADV. PG. 210.
H. B. Instrument Co., American & Bristol Sts., Philadelphia, Pa. ..... C, D, P, R
Humidigraph—See Bristol Co., The
Industrial Instrument Co., 89 Commerce Rd., Cedar Grove, N. J. L
Instrument Devel. Labs. Inc., 163 Highland Ave., Needham Heights, Mass. ..... A
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ..... C, M, P
ADV. PG. 249.
King-Gage—See Kings Engineering Corp.
Kings Engineering Corp., 415 Detroit St., Ann Arbor, Mich. ..... G, I
Leeds & Northrup Co., 444 North 16th St., Philadelphia, Pa. ..... C, F, G, L, P
Liquidepth Indictaors Inc., 42-26 28th St., Long Island City, N. Y. ..... G
Liquidometer Corp., 36th & 37th Sts., Skillman Ave., Long Island City, N. Y. ..... G
Lumenite Electronic Co., 407 South Dearborn St., Chicago 5, Ill. ..... G
Lunkenheimer Co., Waverly Ave. & Beekman St., Cincinnati, Ohio. ..... F
M B Manufacturing Co., Inc., 1060 State St., New Haven 11, Conn. ..... Q
Macbeth Corp., P. O. Box 950, Newburgh, N. Y. L
Manning & Maxwell & Moore, Inc., 250 East Main St., Stratford, Conn. ..... C, G, M, P, R
Marsh Corp., James P., Skokie, Ill. ..... M, P
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass. ..... F, G, M, P
Metzger & Son, 2600 North Sixth St., Philadelphia 33, Pa. ..... K
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn. ..... C, M, P
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange Sts., Philadelphia 70, Pa. ..... B, C, F, G, I, L, M, P, R
Moeller Instrument Co., 132-02 89th Ave., Richmond Hill 8, N. Y. ..... C, M, P, R
Moisture Register Co., 1510 W. Chestnut St., Alhambra, Calif. ..... E, I
Moisture Monitor—See Strandberg Engineering Laboratories
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. I
ADV. PG. 284.
Nason Co., The, 20 West Washington St., Clarkson, Mich. ..... G, M, P
Neptune Meter Co., 30 Rockefeller Plaza, New York 20, N. Y. ..... F
Niagara—See Buffalo Meter Co.
Nopco Chemical Co., 1st & Essex Sts., Harrison, N. J. I
Oil Rite Corp., 2318 Waldo Blvd., Manitowoc, Wis. ..... G
Parks-Cramer Co., Fitchburg, Mass. ..... R
Partlow Corp., 2 Campion Rd., New Hartford, N. Y. ..... P
Petrometer—See Liquidepth Indicators Inc.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y. ..... H
Powell Co., William, 2525 Spring Grove, Cincinnati 22, Ohio ..... G
Powers Regulator Co., 3400 Oakton St., Skokie, Ill. ..... C, P
Precision Thermometer & Instr. Co., 1434 Brandywine St., Philadelphia, Pa. ..... C, D, P, R
Princo—See Precision Thermometer & Instr. Co.
Pyro—See The Pyrometer Instrument Co., Inc.
Pyrometer Instrument Co., Inc., The, Bergenfield N. J. ..... P
Republic Flow Meters, 2240 Diversey Pkway, Chicago 47, Ill. ..... F, G, M
Robertshaw-Fulton Controls Co., 2920 North Fourth St., Philadelphia 33, Pa. ..... G, I, P
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y. ..... P
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa. ..... F
Scientific Instrument Co., 1041 Second Ave., Detroit 26, Mich. ..... M, P, R
Sticht & Company, 27 Park Pl., New York, N. Y. ..... N
Strandberg Engineering Laboratories, 416 West Market, Greensboro, N. C. I
Streamline—See H. B. Instrument Co.
Streeter-Amet Co., 4101 Ravenswood Ave., Chicago 13, Ill. ..... C, F, G, L, M, P
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio ..... F, G, M, P
Tank-O-Meter—See Uehling Instrument Co.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y. ..... C, F, G, I, M, P, R
Testing Machines, Inc., 123 West 64th St., New York, N. Y. ..... C, I, L
Thermo-Humidigraph—See Bristol Co., The
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa. ..... L, P
Trimount Instrument Co., 3119 West Lake St., Chicago 12, Ill. ..... F, G, M
Uehling Instrument Co., 473 Getty Ave., Paterson 3, N. J. ..... F, G, M
Weksler Thermometer Co., Martinique Bldg., 49 West 32 St., New York 1, N. Y. ..... C, M, P, R
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J. ..... C, I, M, P, R
Wilkens-Anderson Co., 4525 W. Division St., Chicago 51, Ill. L

INSULATION—*Boiler* (See Covering—Pipe & Boiler)

INSULATION—*Building Construction*

Foamglas—See Pittsburgh Corning Corp.
International Vermiculite Co., Girard, Ill.
Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.

INSULATION—*Pipe* (See Covering—Pipe & Boiler)

INSULATION—*Vibration*

Acme Asbestos Covering & Flooring Co., 1313 Fulton St., Chicago 7, Ill.
Aetna Felt Co., 204 Centre St., New York 13, N. Y.
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa.
ADV. PG. 185.

Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Barry Corp., The, 763 Pleasant St., Watertown 72, Mass.
Barrymount—See Barry Corp., The
Cork Insulation Co., 730 Fifth Ave., New York 19, N. Y.
Elasti-Rib—See Korfund Company
Fabco—See Fabreeka Products Co.
Fabreeka Products Co., 222 Summer St., Boston, Mass.
Felters Co., The, 210 South St., Boston 11, Mass.
Glass Fibers, Inc., 1810 Madison Ave., Toledo, Ohio
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Isomode—See M B Manufacturing Co., Inc., The
Johns-Manville Corp., 22 East 40th St., New York 16, N. Y.
Korfund Company, 48-15 32nd Place, Long Island City, N. Y.
Linisorb—See Felters Co., The
Lord Mfg. Co., 1635 West 12th St., Erie 6, Pa.
M B Manufacturing Co., Inc., The, 1060 State St., New Haven 11, Conn.
Mechanical Felt & Textiles Co., 50 West 18th St., Weehawken, N. J.
Mundet Cork Corp., 7101 Tonnelle Ave., North Bergen, N. J.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Vibration Eliminator Co., 10-28 47th Ave., Long Island City, N. Y.

INTERCOMMUNICATORS

Executone, Inc., 415 Lexington Ave., New York 17, N. Y.
Kellogg Switchboard & Supply Co., 79 West Monroe St., Chicago 3, Ill.
Modernphone—See Radio Corp. of America
Radio Corp. of America, Engineering Products Dept., Camden, N. J.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Select-O-Phone—See Kellogg Switchboard & Supply Co.
T. N. Telephone Sales Co., 11 Park Place, New York, N. Y.

ION EXCHANGERS & EQUIPMENT (See Water Treatment)

IRON LIQUOR

Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J.
New York Color & Chemical Co., 374 Main St., Belleville, N. J.

IRON OXIDE

Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.

IRONS—*Burling*

Bergon & Ball Ltd., Sheffield, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.

ISOLATORS—*Vibration* (See Insulation—Vibration)

JACKS—*Knitting Machines* (See Sinkers & Dividers)

JACQUARD CARD-CUTTING MACHINES

Hardaker Ltd., John T., Bradford, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Zangs A.-G., Carl, Krefeld, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.

JACQUARD CARD-LACING MACHINES

Hardaker Ltd., John T., Bradford, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Singer Sewing Machine Co., 149 Broadway, New York 6, N. Y.
Zangs A.-G., Carl, Krefeld, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.

JACQUARD HARNESS (See Harness & Heddles)

JACQUARD HEADS & EQUIPMENT

Bergedorfer Eisenwerk A. G., Astra-Werke Abt. Textilmaschinen, Hamburg-Bergedorf, Germany
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Gusken G.m.b.h., Jean, Dulken/Rhld., Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Halton's Sons, Thomas, C & Clearfield Sts., Philadelphia 34, Pa.
Hardaker Ltd., John T., Bradford, England—Represented by Atkinson, Haserick & Co., Boston 6, Mass.
Zangs A.-G., Carl, Krefeld, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.

JAPAN WAX (See Waxes—Japan)

J-BOXES

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Fleet Line—See Riggs & Lombard, Inc.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
INDUSTRIAL OVENS, INC., 13825 Triskett Road, Cleveland 11, Ohio. ADV. PG. 154.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Rotherm Engineering Co. Inc., 7280 West Devon Ave., Chicago 31, Ill.
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa.
TEXTILE MACHINERY, INC., DIV. PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

JIGS (See Dyeing Machines—Jig)

JOINTS—Revolving

Barco Mfg. Co., 500 North Hough, Barrington, Ill.
Chiksan Co., Brea, Calif.
Diamond Metal Products Co., 406 Market St., St. Louis 2, Mo.
Dix—See Lovejoy Flexible Coupling Co.
JOHNSON CORP., THE, Three Rivers, Mich. ADV. PG. 253.
Kewavee—See Walworth Co.
Lovejoy Flexible Coupling Co., 5000 West Lake St., Chicago 44, Ill.
Perfecting Service Co., 332 Atando Ave., Charlotte, N. C.
ROTHERM ENGINEERING CO., INC., 4911 West Irving Park Rd., Chicago 41, Ill. ADV. PG. 168.
Walco—See Walworth Co.
Walworth Co., 60 East 42 St., New York 17, N. Y.

JUTE-PROCESSING MACHINES (See Cordage Machines)

KAOLIN (See China Clay)

KETTLES—*Corrosion-Resisting*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Aluminum Co. of America, New Kensington, Pa.
Atlas Mineral Prods. Co., Mertztown, Pa.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Brighton Copper Wks, Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Bristol Metal Products Corp., Box 616, Birstol, Tenn.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Conn & Co., 14 South Marion St., Warren, Pa.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Duriron Company, Dayton 1, Ohio
Fisher Mfg. Co., Box 244, Hartwell, Ga.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
HALL & SONS, AMOS H., 5500 North Water St., Philadelphia 20, Pa. ADV. PG. 252.
Haveg Corp., Newark, Del.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
KLAUDER WELDON GILES MACHINES CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Orange Roller Bearing Co., Metalsmiths Div., 560 White St., Orange, N. J.
Pfaudler Company, 89 East Ave., Rochester 4, N. Y.
Southland—See Chattanooga Boiler & Tank Co.
TEXTILE MACHINERY, INC., DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Union Iron Works, 15 & Cascade Sts., Erie, Pa.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
U. S. Stoneware Co., The, Akron 9, Ohio
Van Range Co., The John, Fifth & Butler Sts., Cincinnati 2, Ohio
Venengo Engrg. Co., G. & Lycoming Sts., Philadelphia 24, Pa.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

KETTLES—*Dye* (See Kettles—Corrosion-Resisting or Dyeing Machines—Piece Goods, Reel)

KETTLES—*Mixing*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Aluminum Co. of America, New Kensington, Pa.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Brighton Copper Wks. Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Conn & Co., 14 South Marion St., Warren, Pa.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
HALL & SONS, AMOS H., 5500 North Water St., Philadelphia 20, Pa. ADV. PG. 252.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., North Adams, Mass.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Orange Roller Bearing Co., Metalsmiths Div., 560 White St., Orange, N. J.
Pfaudler Company, 89 East Ave., Rochester 4, N. Y.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Southland—See Chattanooga Boiler & Tank Co.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Van Range Co., The John, Fifth & Butler Sts., Cincinnati 2, Ohio
Werner Machine Co., 183 Autumn St., Passaic, N. J.

KETTLES—*Size*

Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Brighton Copper Wks., Inc., Hamilton Copper & Brass Wks. Div., 820 State Ave., Cincinnati 14, Ohio
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Corning Glass Works, Corning, N. Y.
Fleet Line—See Riggs & Lombard, Inc.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
HALL & SONS, AMOS H., 5500 North Water St., Philadelphia 20, Pa. ADV. PG. 252.
Hibbert & Co., Ltd., Joseph, Darwin, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston (6), Mass.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Orange Roller Bearing Co., Metalsmiths Div., 560 White St., Orange, N. J.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Southland—See Chattanooga Boiler & Tank Co.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
Sucker G.m.b.H., Gebruder, M. Gladbach/Rhineland, Germany
TEXTILE MACHINERY, INC., DIV. PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
West Point Foundry & Machine Co., West Point, Ga.

KIER-BOILING AGENTS & ASSISTANTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Armour & Co., Industrial Soap Dept., 1355 West 31 St., Chicago 9, Ill.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Blockson Chemical Co., Joliet, Ill.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa.
Carbide & Carbon Chemicals Co., Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids, Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio
Dow Chemical Co., Midland, Mich.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. ADV. PG. 284.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. ADV. PG. 272.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Ultra Chemical Works, Inc., 2 Wood St., Paterson 4, N. J.
Warwick Chemical Co. Div. Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. T.W.—Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

KIERS—*Bleaching*

ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. ADV. PG. 132, 133.

KNITTING MACHINE ATTACHMENTS—*For Laying-in Elastic Yarn*

Banner—See Hemphill Company
Crawford Mill Supply Co., H. E., 825 South Main St., High Point, N. C.
Edmos Products Corp., 15 Christopher Ave., Brooklyn 12, N. Y.
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I. ADV. PG. 144.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

KNITTING MACHINES—*Circular*

Acme Knitting Machine & Needle Co., Franklin, N. H.
Banner—See Hemphill Company
Bentley Knitting Machy. Org. Inc., The, 31 Canal St., Providence, R. I.
Brinton Company, H., Kensington Ave. & M St., Philadelphia 24, Pa.
CRANE MFG. CO., Lakeport, N. H. ADV. PG. 236.
Crawford Mill Supply Co., H. E., 825 South Main St., High Point, N. C.
Edmos Products Corp., 15 Christopher Ave., Brooklyn 12, N. Y.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I. ADV. PG. 144.
Hoffman Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J.
JACQUARD KNITTING MACHINE CO., INC., G & Lycoming Sts., Philadelphia 24, Pa. ADV. PG. 234.
LEIGHTON MACHINE CO., Box 418, Manchester, N. H. ADV. PG. 182.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
QUEENS MACHINE CO., 280 Starr St., Brooklyn 37, N. Y. ADV. PG. 166.
Scott & Williams, Inc., 350 Fifth Ave., New York 1, N. Y.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.
SUPREME KNITTING MACHINE CO., INC., 94-02 104th St., Ozone Park 16, N. Y. ADV. PG. 157.
TOMPKINS BROS. CO., 629 Oneida St., Syracuse 4, N. Y. ADV. PG. 218.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Wildman Mfg. Co., Norristown, Pa.

KNITTING MACHINES—*Circular Half Hose*

Banner—See Hemphill Company
Bentley Knitting Machy. Org. Inc., The, 31 Canal St., Providence, R. I.
Crawford Mill Supply Co., H. E., 825 South Main St., High Point, N. C.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I. ADV. PG. 144.
Scott & Williams, Inc., 350 Fifth Ave., New York 1, N. Y.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

KNITTING MACHINES—*Circular Women's Hosiery*

Acme Knitting Machine & Needle Co., Franklin, N. H.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
Industrie-Werke Karlsruhe, Karlsruhe, Germany
Scott & Williams, Inc., 320 Fifth Ave., New York 1, N. Y.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

KNITTING MACHINES—*Flat* (See Also Knitting Machines—Full-Fashioned & Hand)

Ainslie Knitting Machine Co., 740 Grand St., Brooklyn 11, N. Y.
Bentley Knitting Machy. Org. Inc., The, 31 Canal St., Providence, R. I.
Cidega Machine Mfg. Co., Inc., 270 Johnson Ave., River Edge, N. J.
LAMB KNITTING MACHINE CO., 8 Montgomery St., Chicopee Falls, Mass. ADV. PG. 244.
QUEENS MACHINE CO., 280 Starr St., Brooklyn 37, N. Y. ADV. PG. 166.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.

KNITTING MACHINES—*Full-Fashioned Hosiery*

Lieberknecht, Inc., Karl, Reading, Pa.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.
TEXTILE MACHINE WORKS, Reading, Pa. ADV. PG. 136, 137.
Tisch Machine & Tool Co., 454 Spring St., Elizabeth 4, N. J.
Twin Knitter—See Reiner, Inc., Robert
Wildman Mfg. Co., Norristown, Pa.

KNITTING MACHINES—*Hand*

LAMB KNITTING MACHINE CO., 8 Montgomery St., Chicopee Falls, Mass. ADV. PG. 244.
QUEENS MACHINE CO., 280 Starr St., Brooklyn 37, N. Y. ADV. PG. 166.

KNITTING MACHINES—*Links & Links—Circular*

Bentley Knitting Machy. Org. Inc., The, 31 Canal St., Providence, R. I.
JACQUARD KNITTING MACHINE CO., INC., G & Lycoming Sts., Philadelphia 24, Pa. ADV. PG. 234.

KNITTING MACHINES—*Links & Links—Flat*

QUEENS MACHINE CO., 280 Starr St., Brooklyn 37, N. Y. ADV. PG. 166.

KNITTING MACHINES—*Milanese*

Erick Gross Corp., 64-72 West Broad St., Bergenfield, N. J.

KNITTING MACHINES—*Raschel*

Erick Gross Corp., 64-72 West Broad St., Bergenfield, N. J.
Hofmann & Co., Alfred, 635 59th St., West New York, N. J.
Kayloom—See Reiner, Inc., Robert
KIDDE MFG. CO., INC., Bloomfield, N. J. ADV. PG. 151.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.

KNITTING MACHINES—*Ribbers*

Brinton Company, H., Kensington Ave. & M St., Philadelphia 24, Pa.
Edmos Products Corp., 15 Christopher Ave., Brooklyn 12, N. Y.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
SUPREME KNITTING MACHINE CO., INC., 94-02 104th St., Ozone Park 16, N. Y. ADV. PG. 157.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

KNITTING MACHINES—*Tricot*

Erick Gross Corp., 64-72 West Broad St., Bergenfield, N. J.
Hofmann & Co., Alfred, 635 59th St., West New York, N. J.
KIDDE MFG. CO., INC., Bloomfield, N. J. ADV. PG. 150.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Whitin Machine Works, Whitinsville, Mass.

KNIVES—*Cloth* (See Cutters—*Cloth*)

KNIVES—*Machine*

Atkins Saw Div., Borg-Warner Corp., 402 South Illinois St., Indianapolis 9, Ind.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Loring Coes Company, 74 Coes St., Worcester 3, Mass.
Micro-Ground—See Coes Company, Loring
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
SWW—See Simonds-Worden-White Co.
Shield—Taylor-Stiles & Co.
Silver Steel—See Atkins Saw Div. Borg-Warner Corp.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio
Taylor-Stiles & Co., 15 Bridge St., Riegelsville, N. J.

KNOCK-OVER BITS (See Sinkers & Dividers)

KNOTTERS

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
Boyceweavers—See Carter, Inc., A. B.
Carter, Inc., A. B., Gastonia, N. C.
Carter Traveler Co., Gastonia, N. C.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
FISHER, Germany, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Mill Devices Co., Gastonia, N. C.
TITAN, Copenhagen, Denmark, Repr. by Edda International Corp., 468 Fourth Ave., New York 16, N. Y. ADV. PG. 92.

LABELING MACHINES

Package Sealing & Label Co., 141 East 25th St., New York, N. Y.
Radio Receptor Co., 251 West 19 St., New York 11, N. Y.
Soabar Co., 5815 Erdrick St., Philadelphia 24, Pa.

LABELS—*Box*

Fent-onamel—See Fenton Label Co.
Fenton Label Co., 506 Race St., Philadelphia 6, Pa.
Heat-O-Seal—See Tompkins Label Service
Package Sealing & Label Co., 141 East 25th St., New York, N. Y
Pres-To-Seal—See Tompkins Label Service
St. Louis Sticker Co., 1906 Pine St., St. Louis 3, Mo.
Stampagraph Company, 79 Alexander Ave., New York 54, N. Y.
Tompkins Label Service, Frankford Ave. at Allegheny Ave., Philadelphia, Pa.
Topflight Tape Co., 160 East Ninth Ave., York, Pa.

LABELS—*Cone*

Soabar Co., 5815 Erdrick St., Philadelphia 24, Pa.

LABELS—*Gummed* (See Labels—*Box*)

LABELS—*Printed-Cloth*

Hope Webbing Co., P. O. Box 1495, Providence 1, R. I.
Kenslo—See Topflight Tape Co.
Topflight Tape Co., 160 East Ninth Ave., York, Pa.

LABELS—*Woven*

Alkahn Silk Label Co. Inc., 70 West 40th St., New York, N. Y.
Alkan—See Alkahn Silk Label Co. Inc.
Artistic Weaving Co., 141 West 36th St., New York 18, N. Y.
Cash's—See Cashwoven, Inc.
Cashwoven, Inc., South Norwalk, Conn.
Jacobs Label Co. Inc., 270 Lafayette St., New York 12, N. Y.
Labelit—See Alkahn Silk Label Co. Inc.
United States Woven Label Co., 29 West 34th St., New York 1, N. Y.
Warner Woven Label Co., 200 Fifth Ave., New York, N. Y.

LABORATORY EQUIPMENT (See Testers)

LABORATORIES—*Testing* (See Commission Services)

LACTIC ACID (See Acids)

LADDERS (See Scaffolds & Ladders)

LAGS—*Picker*

BAGSHAW CO., W. H., Mill 5-Pine St., Nashua, N. H. ADV. PG. 160.
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Gerry & Son, George, 1709 Main St., Athol, Mass.
REED CO., ROBERT C., 370 Seventh Ave., New York 1, N. Y. ADV. PG. 222.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.
Whitin Machine Works, Whitinsville, Mass.

LAKE COLORS

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio

LAMPS—*Color-Matching or Daylight* (See also Lighting Fixtures & Lamps)

Analyte—See Crown Engineering & Sales Co.
Biltmore—See Gibson Mfg. Co.
Colonial Electric Products Inc., Market St., East Paterson, N. J.
CROWN ENGINEERING & SALES CO., 421 Hill St., Harrison, N. J. ADV. PG. 216.
General Elec. Co., Nela Park, Cleveland, Ohio
Gibson Mfg. Co., 1919 Piedmont Circle, N.E., Atlanta, Ga.
Highlander—See Gibson Mfg. Co.
Holo-77—See Gibson Mfg. Co.
Macbeth Corp., P. O. Box 950, Newburgh, N. Y.
Nadolite—See Gibson Mfg. Co.
Parabolite—See Gibson Mfg. Co.

LAMPS—*Infrared* (See Dryers—Infrared)

LAPPERS

Sliver ..... **A**
Ribbon ..... **B**
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggione Como, Italy ..... A
Hetherington & Sons, Inc., John, Gastonia, N. Y. A, B
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ..... A
ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y. B
Whitin Machine Works, Whitinsville, Mass. ..... A, B

LAPPINGS

Aetna Felt Co., 204 Centre St., New York 13, N. Y.
Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Mertecfelt Corp., P. O. Box 688, Englewood, N. J.

LATCH NEEDLES (See Needles—Latch)

LATEX—*Synthetic*

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Resinous Chem. Corp., 102 Foster St., Peabody, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Dow Chemical Co., Midland, Mich.
Flintkote Co., The, Ind. Prods. Div., 3 West 46th St., New York 20, N. Y.
General Latex & Chem. Corp., 666 Main St., Cambridge, Mass.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio ADV. PG. 278.
MONTGOMERY BROTHERS, Penrose & Packer Avenues, Philadelphia, Pa. ADV. PG. 288.
Paratol—See Testworth Laboratories, Inc.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N. Y.
Stein, Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y.
Testworth Laboratories, Inc., 407 South Dearborn St., Chicago 5, Ill.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Vultex—See General Latex & Chem. Corp.

LAYERS—*Rope* (See Cordage Machines)

LEAD—*Salts of-*

Acetate ..... **A**
Nitrite ..... **B**
Oxide (Litharge) ..... **C**
Sulfate ..... **D**
Eagle-Picher Co., The, American Bldg., Cincinnati 1, Ohio ..... C, D
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C, D
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... A, B, C, D
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. A, B, C, D ADV. PG. 267.
Harshaw-Chemical Co., 1945 East 97 St., Cleveland, Ohio ..... A
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. ..... A, B, C
National Lead Co., 111 Broadway, New York 6, N. Y. ..... A, C, D
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio ..... C, D

LEASE RODS (See Rods—Lease)

LEASING MACHINES (See also Tying-in Machines—Warp)

FISHER, Germany, Repr. by: Stellite American Corp., 60 E. 42 St., New York 17, N. Y. ADV. PG. 242.

LEATHERS—*Binder* (See Straps—Loom)

LEATHERS—*Textile* (See Aprons—Rub or Aprons—Long Draft or Covering—Leather Roll, Pickers—Loom or Straps—Loom or Tape Condensers)

LET-OFFS—*Warp & Cloth*

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Fiber Mfg. Co., Newton, N. C.
INDUSTRIAL OVENS INC., 13825 Triskett Road, Cleveland 11, Ohio. ADV. PG. 154.

LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
PRECISION GEAR and MACHINE CO., 2001 North Tryon St., Charlotte, N. C. ADV. PG. 224.
Societe Anonyme Adolphe SAUER Arbon, Switzerland
Whitin Machine Works, Whitinsville, Mass.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

LEVELING AGENTS (See Detergents)

LIFTERS—*Warp-Beam* (See Hoists—Warp-Beam)

LIGHTING FIXTURES & LAMPS (Fluorescent & Incandescent)

Arrow Head—See Holdenline Co.
Benjamin Electric Mfg. Co., Des Plaines, Ill.
Chan'l-Run—See Holdenline Co.
Colonial Electric Products Inc., Market St., East Paterson, N. J.
Guth Co., Edwin F., 2615 Washington Blvd., St. Louis 3, Mo.
Guthlite—See Guth Co., Edwin F.
Holdenline Co., 2301 Scranton Rd., Cleveland 13, Ohio
Miller Co., The, 99 Center St., Meriden, Conn.
Sylvania Electric Products, Inc., Fixture Div., 1740 Broadway, New York 19, N. Y.
TX-40—See Benjamin Electric Mfg. Co.
Vapor-Tite 40—See Benjamin Electric Mfg. Co.
Vapolets—See Benjamin Electric Mfg. Co.
Wheeler Reflector Co., 275 Congress St., Boston 10, Mass.

LINGOES—*Jacquard*

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Halton's Sons, Thomas, C & Clearfield Sts., Philadelphia 34, Pa.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.

LINKERS (See Loopers)

LININGS—*Tank (Corrosion-Resisting)*

Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.

LINSEED OIL (See Oil—Natural)

LITHOPONE

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Glidden Co., The, 11001 Madison Ave., Cleveland 2, Ohio
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio.

LOADERS—*Kier* (See Pilers—Kier)

LOADING AGENTS (See under individual headings; Calcium—Salts of, China Clay, Talc, etc.)

LOCKERS—*Storage & Clothes Cabinets*

Hallowell—See Standard Pressed Steel Co.
Lyon Metal Products Inc., 935 Madison Ave., Aurora, Ill.
Standard Pressed Steel Co., Box 571, Jenkintown, Pa.

LOCUST-BEAN GUM (See Gums—Carob)

LOOMS

Axminster ..... A
Chenille ..... B
Cotton C
Hand ..... D
Jacquard (See Jacquard Heads)
Miscellaneous (Asbestos, Coir & Sisal, Paper Felt, etc.) ..... E

LOOMS *Cont'd*

Narrow-Fabric ..... F
Needle ..... G
Plush & Velvet ..... H
Rayon I
Ribbon (See Looms—Narrow-Fabric)
Shuttleless (See Looms—Narrow Fabric)
Silk (See Looms—Rayon)
Terry ..... J
Wilton ..... K
Wire L
Woolen & Worsted ..... M
Woven-Label ..... N

Astra, Bergedolfer Webschl Fabrik, Germany, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242 ..... M
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94 ..... C, I
Bergedorfer Eisenwerk A. G., Astra-Werke Abt. Textilmaschinen, Hamburg-Bergedorf, Germany A, B, E, M
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass A, B, C, E, F, G, H, I J, M, N
DRAPER CORP., Hopedale, Mass ..... C, I, M
ADV. PG. 1.
Fitz Water Wheel Co., Penn St. & P. R. E., Hanover, Pa. L
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa ..... F, N
Gusken, G.m.b.h., Jean, Dulken/Rhld., Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
HL 16—See Hunt Loom & Mach. Wks. Inc.
HL 50—See Hunt Loom & Mach. Wks., Inc.
HR 50—See Hunt Loom & Mach. Wks., Inc.
Hand-Skill Looms, Inc., 59 Social St., Woonsocket, R. I D
Hunt Loom & Machine Works, Inc., 200 Academy St., Greenville, S. C. ..... C, I
Lentz, S., Viersen/Rhld., Germany—Repr. by Textile Machinery Co., 277 North Ave., N. Y M
Loring Coes Company, 74 Coes St., Worcester 3, Mass. A
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ..... H
ADV. PG. 198.
Muller, Jakob, Frick, Switzerland—Repr. by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y ..... F, H, N
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ..... A
ADV. PG. 118.
Reed Loom Company, Springfield, Ohio D
Reising, W., Wuppertal-Barmen, Germany, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ..... F
Saurer, Adoloh, Arbon, Switzerland—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ..... C, E, H, I, L, M
Societe Anonyme Adolphe SAUER, Arbon, Switzerland C F, I, L, M
Sulzer—See Warner & Swasey Co., The
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y ..... F, N
Texnovo, S.p.A., Via Revere 8, Milan, Italy ..... F
Union Loom Works, Boonville, N. Y D
WARNER & SWASEY CO., THE, 5701 Carnegie Ave., Cleveland 3, Ohio ..... C, I, M
ADV. PG. 76, 77.
X, XD, XL, XP, X-2—See Draper Corp.
Carl Zangs, A.-G., Krefeld, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y I

LOOM PARTS—*Metallic & Non-Metallic*

A & W Machine Co., P. O. Box 111, Charlton City, Mass.
American Chain & Cable Co., Inc., York, Pa.
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa.
ADV. PG. 185.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Babbitt Bros., Inc., 10 Water St., Fairhaven, Mass.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Bergendorfer Eisenwerk A. G., Astra-Werke Abt. Textilmaschinen, Hamburg-Bergedorf, Germany
Bullard Clark Co., The, Jacobs Northern Div., F. H., Danielson, Conn.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Corning Glass Works, Corning, N. Y.
Cox Foundry & Machine Co., 395 Cox Ave., S.W., Atlanta, Ga.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hardwood Mfg. Co., Inc., P. O. Box 929, Greenville, S. C.
Hunt Loom & Mach. Wks. Inc., 200 Academy St., Greenville, S. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y.
Lignostone—See Techno Exports
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
National Plastics, Inc., P. O. Box 152, Knoxville 1, Tenn.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
Orange Line—See Graton & Knight Co.
Pratt, Robert G., 9 May St., Worcester 3, Mass.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
PRECISION GEAR AND MACHINE CO., 2001 North Tryon St., Charlotte, N. C. ADV. PG. 224.
Rice Dobby Chain Co., Millbury, Mass.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Salisbury Iron Works, Salisbury, N. C.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Shawmut Engineering Co., 195 Freeport St., Boston 22, Mass.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
Southern States Equipment Co., Hampton, Ga.
SPAULDING FIBRE CO. INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Tru-Li-Co—See Truche Leather Co.
Truche Leather Co., Peabody, Mass.
WEST SIDE FOUNDRY CO., 2 South Hanks St., Rome, Ga. ADV. PG. 216.
Wirecore—See Rice Dobby Chain Co.

LOOM SIGNALING DEVICES

LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.

LOOP-CUTTING MACHINES (See Cutters)

LOOPERS—*Hosiery*

Hepworth Co., Inc., John W., NW Cor. Lehigh Ave. & Mascher St., Philadelphia 33, Pa.
Southern Textile Machinery Co., 2nd & Norton Sts., Paducah, Ky.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

LOOPERS—*Knitted Fabric*

Cidega Machine Mfg. Co., Inc., 270 Johnson Ave., River Edge, N. J.
Hepworth Co., Inc., John W., NW Cor. Lehigh Ave. & Mascher St., Philadelphia 33, Pa.
Southern Textile Machinery Co., 2nd & Norton Sts., Paducah, Ky.

LOOPERS—*Sewing*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.

LUBRICANTS—*Fiber & Yarn*

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Norton Co., Behr-Manning Corp. Div., 254 Seifert St., Troy, N. Y.
Ben Boy—See Georgia-Carolina Oil Co., Macon, Ga.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.

Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Fiske Bros. Refining Co., 125 Lockwood St., Newark, N. J.
Georgia-Carolina Oil Co., Macon, Ga.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
Lubriplate—See Fiske Bros. Refining Co.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Master Lubricants Co., 962 East Fourth St., Los Angeles, Calif.
Metro-Atalntic, Inc., 2072 Smith St., Centerdale 11, R. I.
Micron Size—See Southern Sizing Co.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Pike—See Norton Co., Behr-Manning Corp. Div.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Phialdelphia 25, Pa.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
Shell Oil Corp., 50 West 50th St., New York 20, N. Y.
Sinclair Refining Co., Lubricating Sales Dept., 600 Fifth Ave., New York 20, N. Y.
Slix—See Southern Sizing Co.
Socony-Vacuum Oil Co., Inc., 26 Broadway, New York 4, N. Y.
Southern Sizing Co., P. O. Box 391, East Point, Ga.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Tide Water Associated Oil Co., 17 Battery Pl., New York 4, N. Y.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

LUBRICANTS—*Oils & Greases*

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Boyle-Midway Inc., 22 East 40 St., New York 16, N. Y.
Bustrux—See Warren Refining & Chemical Co., The
Cities Service Oil Co., Sixty Wall Tower, New York 5, N. Y.
Coolube—See Warren Refining & Chemical Co., The
Dixon Crucible Co., Joseph, 167 Wayne St., Jersey City 3, N. J.
Dow-Corning Corp., Midland, Mich.
Fiske Bros. Refining Co., 125 Lockwood St., Newark, N. J.
Green Gold—See Warren Refining & Chemical Co., The
Gulf Oil Corp., Gross St. & Penna. RR, Pittsburgh, Pa.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Keystone Lubricating Co., 21st Clearfield & Lippincott Sts., Philadelphia 32, Pa.
Luberoil Petroleum Corp., 4819 North Broadway, St. Louis 7, Mo.
Sinclair Refining Co., Lubricating Sales Dept., 600 Fifth Ave., New York 20, N. Y.
Lubriplate—See Fiske Bros. Refining Co.
Magnus Chemical Co., Inc., 180 South Avenue, Garwood, N. J.
Master Lubricants Co., 962 East Fourth St., Los Angeles, Calif.
NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y. ADV. PG. 101.
Non-Fluid—See New York & New Jersey Lubricant Co.
Plastigere—See Warren Refining & Chemical Co., The
Plastilube—See Warren Refining & Chemical Co., The
Pure Oil Co., The, 35 East Wacker Dr., Chicago 1, Ill.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Ridge Tool Co., The, 400 Clark St., Elyria, Ohio
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Shell Oil Corp., 50 West 50th St., New York 20, N. Y.
Socony-Vacuum Oil Co., Inc., 26 Broadway, New York 4, N. Y.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Standard Oil Co., 910 South Michigan Ave., Chicago 80, Ill.
Stewart-Warner Corp., 1226 Diversey Pkway., Chicago 14, Ill.
Sun Oil Co., Industrial Products Dept., Philadelphia 3, Pa.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
TEXAS COMPANY, THE, 135 East 42 St., New York, N. Y. ADV. PG. 4th Cover.
Tide Water Associated Oil Co., 17 Battery Pl., New York 4, N. Y.
Valvoline Oil Co., Freedom, Pa.
Vexilla Oil—See Shell Oil Corp.
Warco—See Warrren Refining & Chemical Co., The
Warren Refining & Chemical Co., The, 750 Prospect Ave., Cleveland 15, Ohio
3-In-One—See Boyle-Midway, Inc.

LUBRICATORS

Machine ..... **A**
Stock ..... **B**
Bijur Lubricating Corp., 151 West Passaic Ave., Rochelle Park, N. J. ..... A
Centromatic—See Lincoln Engineering Co.
Eagle Mfg. Co., Wellsburg, W. Va. ..... A
Farval Corp, 3249 East 80 St., Cleveland, Ohio ..... A
Gits Bros. Mfg. Co., 1846 South Kilbourn, Chicago 23, Ill. ..... A
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass. ..... B
JARRELL MACHINE CO., W. G., 1200 S. Mint St., Charlotte, N. C. ..... A
ADV. PG. 254.
Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo. ..... A
Lunkenheimer Co., Waverly Ave. & Beekman St., Cincinnati, Ohio ..... A
Major—See Lunkenheimer Co.
M-B Products Co., 46 Victor Ave., Detroit 3, Mich. ..... A
Norgren Co., C. A., 3400 South Elati St., Englewood, Colo. ..... A
Oil Rite Corp., 2318 Waldo Blvd., Manitowoc, Wis. ..... A
Opto-Matic—See Trico Fuse Mfg. Co.
Powell Co., William, 2525 Spring Grove, Cincinnati 22, Ohio ..... A
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa. ..... A
Southern Sizing Co., P. O. Box 391, East Point, Ga. ..... A
Stewart-Warner Corp., 1226 Diversey Pkway., Chicago 14, Ill. ..... A
Trabon Engineering Corp., 1816 East 40th St., Cleveland 3, Ohio ..... A
Trico Fuse Mfg. Co., 2940 North Fifth St., Milwaukee 12, Wis. ..... A
Whitin Machine Works, Whitinsville, Mass. ..... A

LUMPERS—*Wool*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Gerry & Son, George, 1709 Main St., Athol, Mass.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.

LUSTERING MACHINES

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Marco Co., 14 Third St., Wilmington 50, Del.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

LUSTRANTS & RELUSTRANTS

Apex Chemical Co., 225 West 34th St., New York, N. Y.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dow Chemical Co., Midland, Mich.
Dura-Beau—See Scholler Bros., Inc.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div. Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. N. J.

MAGNESIUM—*Salts of*

Chloride ..... **A**
Silicofluoride ..... **B**
Sulfate (Epsom Salts) ..... **C**
Acme Asbestos Covering & Flooring Co., 1313 Fulton St., Chicago 7, Ill. ..... A, C
American Agricultural Chemical Co., 50 Church St., New York 7, N. Y. ..... B
Dow Chemical Co., Midland, Mich ..... A, C
Eimer & Amend, 635 Greenwich St., New York 14, N. Y ..... A, C
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. C
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y C
ADV. PG. 267.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo ..... A, C

MAGNESIUM SULFATE (See Magnesium—Salts of)

MAGNETIC SEPARATORS (See Separators—Magnetic)

MAGNETS, PERMANENT NON-ELECTRIC

Eriez Mfg. Co., 1425 Grove Dr., Erie, Pa.
General Electric Co., Carboloy Dept., Box 237, Roosevelt Park PO, Detroit, Mich.

MAGNIFIERS (See Glasses—Magnifying)

MALT (See Desizing Agents)

MANGLES—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I.
ADV. PG. 134, 135.
Tube-Tex—See Tubular Textile Machinery Corp.
TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. ADV. PG. 145.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

MANTLES—*Steaming* (See Decating Machines)

MARKING MACHINES (See also Numbering Machine)

Blak-Ray—See Ultra-Violet Products, Inc.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DURRANT & SONS LTD., G., Stockport, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
Markem Machine Co., 150 Congress St., Keene, N. H.
Marsh Stencil Machine Co., 707 East B St., Belleville, Ill.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Spirngfield, Vt.
ADV. PG. 192.
Seabar Co., 5815 Erdrick St., Philadelphia 24, Pa.

Trumeter Co., 1265 Broadway, New York 1, N. Y.
Ultra-Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.

MARKING TUBES—*Dye & Bleach Resist*

NISSEN, JR. CO., JOHN P., P. O. Box 888, Glenside, Pa. ADV. PG. 213.

MEASURING MACHINES (See also Counters)

CRA—See Cutting Room Appliances Corp.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Cutting Room Appliances Corp., 45 West 25 St., New York 10, N. Y.
DURRANT & SONS LTD., G., Stockport, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.
LIBERTY MACHINE CO. INC., 275 Fourth Ave., Paterson, N. J. ADV. PG. 182.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Measuregraph Co., The, 4245 Forest Park Blvd., St. Louis 8, Mo.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
Trumeter Co., 1265 Broadway, New York 1, N. Y.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Windle Machine Works, North Grafton, Mass.

MENDING MACHINES

MERROW MACHINE CO., THE, 2803 Laurel St., Hartford 6, Conn. ADV. PG. 147
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

MERCERIZING ASSISTANTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. ADV. PG. 272.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

MERCERIZING MACHINES

Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
FARMER NORTON & CO., LTD., SIR JAMES, Manchester, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Scott & Co. Inc., Ernest, 189 Anawan St., Fall River, Mass.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

METALLIZING EQUIPMENT

Metallizing Engineering Co., Inc., 38-14 30th St., Long Island City, N. Y.
Metco—See Metallizing Engineering Co., Inc.
Precision Chrome & Finishing Corp., 370 Park Ave., Worcester 2, Mass.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
Stokes Machine Co., 6018 Tabor Rd., Philadelphia 20, Pa.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.

METAPHENYLENEDIAMINE (See Developers)

METERS (See Instruments or Counters)

METHANOL (See Solvents)

METHYL ALCOHOL (See Solvents)

MICROSCOPES (See GLASSES—Magnifying & Pick)

MILANESE MACHINES (See Knitting Machines—Milanese)

MILDEW PREVENTIVES

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
American Cyanamide Co., Textile Resin Dept., Bound Brook, N. J.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
Berk, & Co., F. W., Park Place East, Wood-Ridge, Bergen Co., N. J.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Darworth, Inc., Cuprinol Div., Simsbury, Conn.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
du Pont de Nemours & Co., Inc., Grasselli Dept., Wilmington 98, Del.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Ferro Chemical Corp., Bedford, Ohio
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio
INTERCHEMICAL CORP., TEXTILE COLORS DIV., 150 Wagaraw Rd., Hawthorne, N. J. ADV. PG. 268, 269.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
New York Color & Chemical Co., 374 Main St., Belleville, N. J.
Nuodex Products Co., Inc., 830 Magnolia Ave., Elizabeth 6, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Rampel Chemical Co., 432 Waverly Ave., Mamoroneck, N. Y.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
SELIG CO., THE, 336-350 Marietta N.W., Atlanta, Ga. ADV. PG. 282.
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio
Southern Sizing Co., P. O. Box 391, East Point, Ga.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.
Witco Chemical Co., 260 Madison Ave., New York 15, N. Y.

MILLS—*Colloid*

CHEMICOLLOID LABORATORIES, INC., 30 Church St., New York 7, N. Y. ADV. PG. 104.
Fitzpatrick Co., W. J., 1001 West Washington Blvd., Chicago, Ill.
Homolow—See Fitzpatrick Co., W. J.
Marco Co., 14 Third St., Wilmington 50, Del.
Rietz Mfg. Co., 150 Todd Rd., Santa Rosa, Calif.
Troy Engine & Machine Co., 42 Vine St., Troy, Pa.

MILLS—*Fulling* (Rotary)

Fleet Line—See Riggs & Lombard, Inc.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.

MILLS—*Kicker*

Fleet Line—See Riggs & Lombard, Inc.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.

MILLS—*Pusher* (See Mills—Kicker)

MINERAL OILS (See Lubricants—Oils & Greases)

MIXERS—*Dye* (See Mixers—Mechanical)

MIXERS—*Mechanical*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Alsop Engineering Corp., 200 South St., Milldale, Conn.
Beach Russ Co., 50 Church St., New York 7, N. Y.
Cherry-Burrell Corp., 427 West Randolph St., Chicago 6, Ill.
Conn & Co., 14 South Marion St., Warren, Pa.
EASTERN INDUSTRIES INC., 296 Elm St., New Haven, Conn. ADV. PG. 159.
Ertel Engineering Corp., Kingston 12, N. Y.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Flow-Master—See Marco Co.
Gyrosolver—See Fisher Scientific Co.
Lawrence Pump & Engine Co., Canal & Marston Sts., Lawrence, Mass.
Lightning—See Mixing Equipment Co.
Marco Co., 14 Third St., Wilmington 50, Del.

Mixing Equipment Co., 179 Mt. Read Blvd., Rochester 11, N. Y.
Rietz Mfg. Co., 150 Todd Rd., Santa Rosa, Calif.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
Troy Engine & Machine Co., 42 Vine St., Troy, Pa.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Vortex—See Lawrence Pump & Engine Co.

MOIRE MACHINES (See Calenders)

MOISTENERS (See Dewing Machines or Humidifiers—Room)

MOLD PREVENTIVES (See Mildew Preventives)

MONOETHANOLAMINE (See Solvents)

MONOMETHYLAMINE (See Solvents)

MONORAILS (See Conveyors—Overhead Monorail)

MONOSODIUM PHOSPHATE (See Sodium—Salts of—Phosphate, Monobasic)

MONTAN WAX (See Waxes—Natural)

MOPS—*Industrial Cleaning* (See Brushes)

MORDANT DYES (See Dyes—Mordant)

MORDANTS

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

MOTHPROOFING AGENTS

American Agricultural Chemical Co., 50 Church St., New York 7, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa.
Dow Chemical Co., Midland, Mich.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Ge-oy Co., Inc., 89 Barclay St., New York, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Rampel Chemical Co., 432 Waverly Ave., Mamaroneck, N. Y.
SELIG CO., THE, 336-350 Marietta N. W., Atlanta, Ga. ADV. PG. 282.
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ADV. PG. 274.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.

MOTIONS—*Builder* (See Roving Frames or Spinning Frames)

MOTORS—*Air or Hydraulic*

Gardner-Denver Co., Quincy, Ill.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis.

MOTORS—*Explosion-Proof*

Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Armour Electric Mfg. Co., 1020 Holland St., Erie, Pa.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Crocker-Wheeler Div. Elliott Co., Ampere, N. J.
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Elliott Co., Jeannette, Pa.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div.—Bldg. 23, Schenectady, N. Y.
Lima Electric Motor Co., The, Findlay Rd., Lima, Ohio
Marathon Electric Mfg. Corp., Wausau, Wis.
Master Electric Co., 126 Davis Ave., Dayton, Ohio
R & M—See Robbins & Myers, Inc.
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Robbins & Myers, Inc., 1930 Clark Blvd., Springfield, Ohio
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Welco—See Wesche Electric Co.
Wesche Electric Co., 1628 Vine St., Cincinnati 10, Ohio
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Gear*

All Motor—See Falk Corp.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis, Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Crocker Wheeler Div., Elliott Co., Ampere, N. J.
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Falk Corp., 3001 West Canal St., Milwaukee, Wis.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Janette Electric Mfg. Co., Lehigh At Main, Morton Grove, Ill.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Marathon Electric Mfg. Corp., Wausau, Wis.
Master Electric Co., 126 Davis Ave., Dayton, Ohio
Merkle-Korff Gear Co., 213 North Morgan St., Chicago 7, Ill.
Miehle Printing Press & Mfg. Co., Star-Kimble Motor Div., 290 Bloomfield Ave., Bloomfield, N. J.
Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa.
Ratlamotors—See Boston Gear Wk. Inc.
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Slo-Speed—See Sterling Electric Motors Inc.
Sterling Elec. Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.
Syncrogear—See U. S. Electrical Motors, Inc.
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.
Universal Gear Corp., 19th & Martindale Ave., Indianapolis 7, Ind.
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Lintproof*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Crocker Wheeler Div., Elliott Co., Ampere, N. J.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Sterling Electric Motors Inc., 5401 Telegraph Rd., Los Angeles 22, Calif.
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Loom*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Crocker Wheeler Div., Elliott Co., Ampere, N. J.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg., 23, Schenectady, N. Y.
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Wesche Electric Co., 1628 Vine St., Cincinnati 10, Ohio
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Sewing Machine*

AMCO—See American Safety Table Co., Inc.
AMERICAN SAFETY TABLE CO., INC., 224 Fifth Ave., New York, N. Y. ADV. PG. 162.
DIEHL MFG. CO., 1189 Finderne Ave., Somerville, N. J. ADV. PG. 167.

MOTORS—*Spinning-Frame*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Crocker Wheeler Div., Elliott Co., Ampere, N. J.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Marathon Electric Mfg. Corp., Wausau, Wis.
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Splashproof*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
Armour Electric Mfg. Co., 1020 Holland St., Erie, Pa.
Bogue Elec. Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Cleveland Electric Motor Co., 5218 Chester Ave., Cleveland 3, Ohio
Crocker Wheeler Div., Elliot Co., Ampere, N. J.
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Electric Specialty Co., 211 South St., Stamford, Conn.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Kloso—See Sterling Electric Motors Inc.
Marathon Electric Mfg. Corp., Wausau, Wis.
Master Electric Co., 126 Davis Ave., Dayton, Ohio
Miehle Printing Press & Mfg. Co., Star-Kimble Motor Div., 290 Bloomfield Ave., Bloomfield, N. J.
R & M—See Robbins & Myers, Inc.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Reynolds Electric Co., 2650 West Congress St., Chicago, Ill.
Robbins & Myers, Inc., 1930 Clark Blvd., Springfield, Ohio
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Sterling Elec. Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.

Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Wesche Electric Co., 1628 Vine St., Cincinnati 10, Ohio
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Totally-Enclosed*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Allis Co., Louis, The, 427 East Stewart St., Milwaukee 7, Wis.
AMCO—See American Safety Table Co. Inc.
AMERICAN SAFETY TABLE CO., INC., 224 Fifth Ave., New York, N. Y. ADV. PG. 162.
Armour Electric Mfg. Co., 1020 Holland St., Erie, Pa.
Bogue Elec. Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Cleveland Electric Motor Co., 5218 Chester Ave., Cleveland 3, Ohio
Crocker Wheeler Div., Elliott Co., Ampere, N. J.
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill.
DIEHL MFG. CO., 1189 Finderne Ave., Finderne Plant, Somerville, N. J. ADV. PG. 167.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Electric Specialty Co., 211 South St., Stamford, Conn.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
GE—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Kloso-Tite—See Sterling Electric Motors Inc.
Lima Electric Motor Co., The, Findlay Rd., Lima, Ohio
Marathon Electric Mfg. Corp., Wausau, Wis.
Master Electric Co., 126 Davis Ave., Dayton, Ohio
Miehle Printing Press & Mfg Co., Star-Kimble Motor Div., 290 Bloomfield Ave., Bloomfield, N. J.
R&M—See Robbins & Myers, Inc.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Reynolds Electric Co., 2650 West Congress St., Chicago, Ill.
Robbins & Myers, Inc., 1930 Clark Blvd., Springfield, Ohio
Sil-Not Belting Corp., Box 3061, Greensboro, N. C.
Sterling Elec. Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.
Uniclosed—See U. S. Electrical Motors, Inc.
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Wesche Electric Co., 1628 Vine St., Cincinnati 10, Ohio
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

MOTORS—*Valve-Operating* (See Valves—Motor-Operated)

MULES—*Woolen & Worsted or Cotton*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Johnson & Bassett, Inc., 114 Foster St., Worcester, Mass.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

MURIATIC ACID (See Acids—Hydrochloric)

NAPTHA SOLVENT (See Solvents)

NAPHTHALENE (See Mothproofing Agents)

NAPHTHOL COLORS (See Dyes)

NAPPER CLOTHING

ASHWORTH BROS. INC., Fall River, Mass. ADV. PG. 161.
Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
HOWARD BROS. MFG. CO., 44 Vine St., Worcester, Mass. ADV. PG. 95.
Merrimack Card Clothing Co., Andover, Mass.
Mertecfelt Corp., P. O. Box 688, Englewood, N. J.
Standard Card Clothing Co., Stafford Springs, Conn.

NAPPERS

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Hofmann Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J.
McCreary Machine Works, Inc., Cohoes, N. Y.
Monforts, A., M. Gladbach/Germany
Muller, Franz, M., Gladbach, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Woonsocket Napping Machinery Co., 355 Orchard St., Woonsocket, R. I.

NEBS—*Lubricating* (See Saddles & Nebs—Lubricating)

NEEDLES

Latch ..... **A**
Mattress ..... **B**
Nottingham Lace (Jacquard) ..... **C**
Sewing Machine ..... **D**
Spring Beard ..... **E**

Acme Knitting Machine & Needle Co., Franklin, N. H. A
Arrow Needle Co., 107 Hollis St., Manchester, N. H. A
BAGSHAW CO., W. H., Mill 5-Pine St., Nashua, N. H. B
ADV. PG. 160.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ..... D
ADV. PG. 106.
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa. ..... C, D
Excelsior—See Torrington Co., The
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I. A
ADV. PG. 144.
Hofmann Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J. ..... A, E
Ives Co., Loyal T., 19 Water St., New Brunswick, N. J. E
Ivesneedle—See Ives Co., Loyal T.
Laconia Needle Co., Laconia, N. H. ..... A
Royersford Needle Works, Inc., Royersford, Pa. ..... E
Simanco—See Singer Sewing Machine Co.
Singer Sewing Machine Co., 149 Broadway, New York 6, N. Y. ..... D
TEXTILE MACHINE WORKS, Reading, Pa. ..... D
ADV. PG. 136, 137.
TOMPKINS BROS. CO., 629 Oneida St., Syracuse 4, N. Y. ..... E
ADV. PG. 218.
Torrington Co., The, 59 Field St., Torrington, Conn. A, B, D, E
Willcox & Gibbs Sewing Machine Co., 214 West 39th St., New York 18, N. Y. ..... D

NETS—*Dye* (See also Bags—Dyeing & Soaking)

Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Best & Co., Edward H., 222 Purchase St., Boston, Mass.
Mertecfelt Corp., P. O. Box 688, Englewood, N. J.

NIPPERS—*Burling* (See Irons—Burling)

NITER CAKE (See Sodium—Salts of—Bisulfate)

NITRATE OF IRON (See Ferrous & Ferric—Salts of—Nitrate)

NITRIC ACID (See Acids)

NITROBENZENE (See Solvents)

NON-WOVEN FABRIC MACHINES

CURLATOR CORP., 501 West Commercial St., East Rochester, N. Y. ADV. PG. 141.

NOZZLES—*Spray*

Aldrich Pump Co., The, 1 Pine St., Allentown, Pa.
AMCO—See American Moitening Co.
AMERICAN MOISTENING CO., 260 West Exchange St., Providence, R. I. ADV. PG. 102.
Bahnson Co., The, 1001 South Marshall St., Winston Salem, N. C.
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis.
Corning Glass Works, Corning, N. Y.
De Vilbiss Co., The, 300 Phillips Ave., Toledo 1, Ohio
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Economizer—See Bahnson Co., The
Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I.
JACKSON MOISTENING CO., Rockwell Ave., Centerdale 11, R. I. ADV. PG. 204.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Oil Rite Corp., 2318 Waldo Blvd., Manitowoc, Wis.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Rex—See Chain Belt Co.
Spraco—See Spray Engineering Co.
Spray Engineering Co., 114 Central St., Somerville 45, Mass.
Supreme Electric Products Corp., 194 Vassar St., Rochester, N. Y.
WHITE & COMPANY, 1440 South Tryon St., P. O. Box 533, Charlotte, N. C. ADV. PG. 180.

NUMBERING MACHINES

American 5 in 1—See American Numbering Machine Co.
AMERICAN NUMBERING MACHINE CO., Atlantic & Shepherd Aves., Brooklyn 8, N. Y. ADV. PG. 208.
American Speed Set—See American Numbering Machine Co.
American Visible—See American Numbering Machine Co.
Bates Manufacturing Co., 30 Vesey St., New York, N. Y.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Roberts Numbering Machine Co., 700 Jamaica Ave., Brooklyn 8, N. Y.

NUTS— (See Fasteners)

NYLON YARNS & FIBERS (See Yarns & Fibers)

OCTYL ALCOHOL (See Solvents)

ODOR-MASKING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Boyle-Midway Inc., 22 East 40 St., New York 16, N. Y.
Carbide & Carbon Chemicals Co., Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Dow Chemicals Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
Momar, Inc., 451 Whitehall St., S.W., Atlanta, Ga.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Rampel Chemical Co., 432 Waverly Ave., Mamaroneck, N. Y.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
SELIG CO., THE, 336-350 Marietta N.W., Atlanta, Ga. ADV. PG. 282.
Sindar Corp., 330 West 42nd St., New York 36, N. Y.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.

OILERS—*Hand & Mechanical* (See Lubricators)

OILERS—*Stock* (See Sprayers—Raw Stock)

OIL—*Fiber Process*

Boil-Off Oils ..... **A**
Rayon Oil ..... **B**
Sulfonated Oils & Fats ..... **C**
Turkey Red Oil ..... **D**
Wool Oil ..... **E**

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa. C
American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa. ..... C, D, E
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ..... A, B, C, D, E
ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y. ..... A, B, C, D, E

Arkansas Co., 185 Foundry St., Newark, N. J. A, B, C, D, E
Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I. A, B, C, D, E
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa. E
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa. A, B, C, E
Bryant Chemical Corp., 6 North St., North Quincy, Mass. A, B, C, D, E
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn. C
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y. A, B, C
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. B, E
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C. A, C, D
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. A, B, C, D, E
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. A, B, C
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y. A, B, C, D, E
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. D
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio B, E
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J. A, B, C, D, E
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa. A, B, C, D, E
Gulf Oil Corp., Gross St. & Penna. RR, Pittsburgh, Pa. A, B, E
Hart Products Corp., 1440 Broadway, New York 18, N. Y. A, B, C, D, E
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa. A, B, C, E
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa. A, B, C, D, E
Kem Products Co. Inc., 229 High St., Newark, N. J. C
LAUREL SOAP MFG CO., INC., Almond & Tioga St., Philadelphia, Pa. A, B, C, D, E
ADV. PG. 284.
LINDER & CO., 296 North Beacon St., Boston 35, Mass. B, C
ADV. PG. 286.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill. A, B, C, D, E
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. C, D, E
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. A, E
ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, C, D, E
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C. A, B, C, D
Nopco Chemical Co., First & Essex Sts., Harrison, N. J. A, B, C, D, E
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y. A, C
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J. A, B, C, D
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. A, B, C, D
ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio E
ADV. PG. 276.
Pure Oil Co., The, 35 East Wacker Dr., Chicago 1, Ill. E
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa. E
ROYCE CHEMICAL CO., Carlton Hill, N. J. B, C, D
ADV. PG. 281.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y. C
Scher Bros., 519 Getty Ave., Clifton, N. J. A, C
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa. A, B, C, D, E
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga. A, B, C
Shell Oil Corp., 50 West 50th St., New York 20, N. Y. A, B, C, D, E
SIDDALL CO., GEORGE F., Spartanburg, S. C. B, C, D
ADV. PG. 286.
Socony-Vacuum Oil Co., Inc., 26 Broadway, New York 4, N. Y. E
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y. A, B, C, D, E
Specialty Products Co., 190 Warren St., Jersey City 2, N. J. B, E
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. A, B, C, D, E
ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J. A, B, C, D, E
Stodghill & Co., 716 Ponce de Leon Pl., N.E., Atlanta, Ga. A, B, C
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. A
ADV. PG. 282.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind. B, C, D, E
Swift & Company, 4115 Packers Ave., Chicago 9, Ill. A, B, C, D, E
Tide Water Associated Oil Co., 17 Battery Pl., New York 4, N. Y. E
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J. A, B, C, D, E
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. A, B, C, D, E
Wood Co., W. A., 40 Oliver St., Boston 10, Mass. E

OIL—*Natural*

Castor . . . . . A
Coconut . . . . . B
Linseed C
Olive . . . . . D
Palm . . . . . E
Pine . . . . . F

Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio C
California Flaxseed Products Co., 3135 East 26 St., Los Angeles 23, Calif. A, B, C
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. A, B, C, D, E, F
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, C, D, E, F
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del. F
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. A, B, C, D, E, F
ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, F
National Lead Co., 111 Broadway, New York 6, N. Y. A, C
Newport Industries Inc., 230 Park Ave., New York, N. Y. F
Nopco Chemical Co., First & Essex Sts., Harrison, N. J. A, B, F
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio A, C
Swift & Company, 4115 Packers Ave., Chicago 9, Ill. A, B, E
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y. A, C, D

OIL—*Non-Staining*

Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Gulf Oil Corp., Gross St. & Penna. RR, Pittsburgh, Pa.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Keystone Lubricating Co., 21st Clearfield & Lippincott Sts., Philadelphia 32, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Luberoil Petroleum Corp., 4819 North Broadway, St. Louis 7, Mo.
NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y. ADV. PG. 181.
Pure Oil Co., The, 35 East Wacker Dr., Chicago 1, Ill.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Shell Oil Corp., 50 West 50th St., New York 20, N. Y.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Standard Oil Co., 910 South Michigan Ave., Chicago 80, Ill.
Stewart-Warner Corp., 1226 Diversey Pkway, Chicago 14, Ill.
Tide Water Associated Oil Co., 17 Battery Pl., New York 4, N. Y.
Wood Co., W. A., 40 Oliver St., Boston 10, Mass.

OIL—*Penetrating*

Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Boyle-Midway Inc., 22 East 40 St., New York 16, N. Y.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Cabot, Inc., Samuel, 141 Milk St., Boston 9, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Dixon Crucible Co., Joseph, 167 Wayne St., Jersey City 3, N. J.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Gulf Oil Corp., Gross St. & Penna. RR, Pittsburgh, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hoffman & Co. Inc., Arnold, 55 Canal St., Providence, R. I.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Keystone Lubricating Co., 21st Clearfield & Lippincott Sts., Philadelphia 32, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Sinclair Refining Co., 600 Fifth Ave., New York 20, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Master Lubricants Co., 962 East Fourth St., Los Angeles, Calif.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Pure Oil Co., The, 35 East Wacker Dr., Chicago 1, Ill.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Shell Oil Corp., 50 West 50th St., New York 20, N. Y.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Standard Oil Co., 910 South Michigan Ave., Chicago 80, Ill.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

OLEIC ACID (See Acids—Fatty)

OLEIN

Arnold, Hoffman & Co. Inc., 55 Canal St., Providence, R. I.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.

OLIVE OIL (See Oils—Natural)

OPENERS—*Bale* (See Bale Breakers)

OPENERS—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

OPENERS—*Cotton*

Salisbury Iron Works, Salisbury, N. C.

OPENERS—*Spiral* (See Openers—Cloth)

OPENERS—*Synthetic-Staple*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
PLATT BROS. & CO., LTD., Aldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Whitin Machine Works, Whitinsville, Mass.

OPENERS—*Tenter-Frame*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa.
ADV. PG. 109.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

OPENERS—*Wool* (See Dusting Machines—Wool & Waste)

OPENERS—*Waste* (See Waste Machines)

ORLON YARN & FIBERS (See Yarns & Fibers)

OVENS—*Conditioning*

American Sterilizer Co., Erie, Pa.
BACKUS MACHINE WORKS, Rt. 17 & Berry Ave., Carlstadt, N. J. ADV. PG. 226.
Brabender Corp., Rochelle Park, N. J.
Carbomatic Corp., 70 Bennington Ave., Freeport, N. Y.
Corona Mfg. Corp., 5210 San Fernando Rd., Glendale 3, Calif.
Doyle Co., The, J. E., 1224 West Sixth St., Cleveland 13, Ohio
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
INDUSTRIAL OVENS INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio.
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J., ADV. PG. 124.
Michigan Oven Co., Architects Bldg., 6th Fl., 423 Brainard St., Detroit, Mich.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.
Wil-Son Mfg. Co., Cloverport, Ky.

OVENS—*Laboratory*

American Gas Furnace Co., Spring & Lafayette Sts., Elizabeth, N. J.
Central Scientific Co., 1700 West Irving Park Rd., Chicago 13, Ill.
Corona Mfg. Corp., 5210 San Fernando Rd., Glendale 3, Calif.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Emerson Apparatus Co., 177 Tremont St., Melrose, Mass.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Fostoria Pressed Steel Corp., The, Fostoria, Ohio
Herbert Products Inc., 74-34 Jamaica Ave., Woodhaven, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LYDON BROTHERS, INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
Michigan Oven Co., Architects Bldg., Sixth Fl., 423 Brainard St., Detroit, Mich.
Nurnberg Thermometer Co., 124 Livingston St., Brooklyn 2, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.

OVER-FEED EQUIPMENT

MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
McCreary Machine Works, Inc., Cohoes, N. Y.

OVER-SEAMING MACHINES

MERROW MACHINE CO., THE, 2803 Laurel St., Hartford 6, Conn. ADV. PG. 147.
Singer Sewing Machine Co., 149 Broadway, New York 6, N. Y.
Superlock—See Willcox & Bibbs Sewing Machine Co.
Willcox & Bibbs Sewing Machine Co., 214 West 39th St., New York 18, N. Y.

OXALIC ACID (See Acids)

OXIDIZING AGENTS (See also under individual headings; Hydrogen Peroxide, Potassium, Permanganate, etc.)

BECCO SALES CORP., River Road & Sawyer St., Buffalo, N. Y. ADV. PG. 265.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Guardian Chem. Corp., 10-15 43 Ave., Long Island City, N. Y.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

OZOKERITE WAX (See Waxes—Natural)

PACKAGE SHAPER

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Sylvania Div., American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.
Thies, B., Coesfeld/Westf., Germany

PACKAGING MATERIALS—*Textile*

Gates Co., N. T., Textile Packagings Dept., Fifth & Chetsnut St., 801 Drexel Bldg., Phila., Pa.
Milprint, Inc., 4200 North Holton St., Milwaukee 1, Wis.
Nashua Gummed & Coated Paper Co., 1935 Clark St., Nashua, N. H.

PACKING—*Asbestos* (See Packing—Rubber & Fibrous Sheet)

PACKING—*Braided* (See Packing—Rubber, Fiber & Metallic Spiral & Ring)

PACKING—*Leather & Rawhide*

Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Belmont Packing & Rubber Co., The, Butler & Sepviva Sts., Philadelphia 37, Pa.
Bitan—See Garlock Packing Co.
Burgess Leather Co., A. E., Grafton, Mass.
Excelsior Leather Washer Mfg. Co., Chestnut & Horsman Sts., Rockford, Ill.
Garlock Packing Co., Palmyra, N. Y.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Page Belting Co., Concord, N. H.
Philadelphia Belting Co., Sixth & Spring Garden Sts., Philadelphia 23, Pa.
Philapac—See Philadelphia Belting Co.
Rhoads & Sons, J. E., 35 North Sixth St., Philadelphia 6, Pa.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Shrewsbury Grain—See Burgess Leather Co., A. E.
Snartan—See Graton & Knight Co.
Tannate—See Rhoads & Sons, J. E.
Warren Belting Co., 33 Arctic St., Worcester 8, Mass.
X-L—See Excelsior Leather Washer Mfg. Co.

PACKING—*Rod Packing* (See Packing—Rubber, Fiber & Metallic, Spiral & Ring)

PACKING—*Rubber & Fibrous Sheet*

Acme Mfg. & Gasket Co., 740 West 41 St., Philadelphia 4, Pa.
Acme Rubber Mfg. Co., 1938 Lambert St., Trenton, N. J.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Belmont Packing & Rubber Co., The, Butler & Sepviva Sts., Philadelphia 37, Pa.
Carlyle Rubber Co., 64 Park Pl., New York 7, N. Y.
Chevron—See Garlock Packing Co.
Ehret Magnesia Mfg. Co., Valley Forge, Pa.
Garlock Packing Co., Palmyra, N. Y.
Gendall Rubber Co., 431 Whitehead Rd., Trenton 4, N. J.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Greene-Tweed & Co., North Wales, Pa.
Hamilton Rubber Mfg. Corp., 51 Mead St., Trenton 3, N. J.
Johns-Manville Corp., 22 East 40th St., New York 16, N. Y.
Keasbey & Mattison Co., Butler Ave., Ambler, Pa.
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio
Morton Machine Works, Columbus, Ga.
New York Belting & Packing Co., One Market St., Passaic, N. J.
Palmetto—See Greene-Tweed & Co.
Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
Thermoid Corp., Whitehead Rd., Trenton 6, N. J.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

PACKING—*Rubber, Fiber & Metallic, Spiral & Ring*

Atlantic Mfg. Co., Wilmington, Del.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
Belmont Packing & Rubber Co., The, Butler & Sepviva Sts., Philadelphia 37, Pa.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass.
France Packing Co., 9925 Bustleton Ave., Philadelphia 15, Pa.
Garlock Packing Co., Palmyra, N. Y.
General Electric Co., Trumbull Electric Dept., 41 Woodford Ave., Plainville, Conn.
Goodall Rubber Co., 431 Whitehead Rd., Trenton 4, N. J.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greene-Tweed & Co., North Wales, Pa.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Johns-Manville Corp., 22 East 40th St., New York 16, N. Y.
Lattice Braid—See Garlock Packing Co.
Morton Machine Works, Columbus, Ga.
New York Belting & Packing Co., One Market St., Passaic, N. J.
Palmetto—See Greene-Tweed & Co.
Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Swing-Wa—See General Electric Co., Trumbull Electric Dept.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

PACKING—*Sheet* (See Packing—Rubber & Fibrous)

PADDERS (See Dyeing Machines—Padders)

PAGERS (See Intercommunicators)

PAILS (See Buckets & Dippers—Corrosion-Resisting)

PAINTS & ENAMELS

Arco Co., The, 7301 Bessemer Ave., Cleveland, Ohio
BABBITT STEAM SPECIALTY CO., Babbitt Square, New Bedford, Mass. ADV. PG. 233.
Barreled Sunlight Paint Co., P. O. Box 1365, Providence, R. I.
Carey Mfg. Co., Phillip, Wayne Ave., Cincinnati 15, Ohio
Damp Coat—See Wilbur & Williams Co., The
Devoe & Reynolds Co., Inc., Truscon Laboratories Div., P. O. Box 69, Milwaukee Jct. P. O., Detroit 11, Mich.
du Pont de Nemours & Co., E. I., Finishes Div., Wilmington 98, Del.
Electro-Chemical Eng. & Mfg. Co., 750 Broad St., Emmaus, Pa.
Greenwood Co., T. H., The, Penn & Logan Aves., North Hills, Pa.
Horn Co., A. C., 10 St. & 44 Ave., Long Island City 1, N. Y.
Master Mechanic Co., 2097 Columbus Rd., Cleveland, Ohio
Midland Paint & Varnish Co., 9115 Rene Ave., Cleveland 5, Ohio
Pittsburgh Plate Glass Co., Paint Div., 632 Fort Duquesne Way, Pittsburgh 22, Pa.
Prufcoat Laboratories, Inc., 53 Main St., Cambridge 42, Mass.
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio
Steelcote Mfg. Co., 3418 Gratiot St., St. Louis, Mo.
Tennant Co., G. H., 2586 North Second St., Minneapolis 11, Minn.
Textile Laboratories, P. O. Box 1003 Gastonia, N. C.
Totrust—See Wilbur & Williams Co., The
TROPICAL PAINT & OIL CO., 1246 West 70 St., Cleveland 2, Ohio. ADV. PG. 97.
Truscon Laboratories Inc., Caniff Ave. & G. T. R. R., Detroit, Mich.
Wilbur & Williams Co., The, 130 Lincoln St., Brighton 35 (Boston), Mass.

PAINT REMOVERS (See Tar & Paint Removers)

PALLETS AND SKIDS

COLEMAN CO., INC., Greenville, S. C.
ADV. PGS. 80, 81.
Market Forge Co., 35 Garvey St., Everett Station, Boston 49, Mass.
Union Steel Products Co., Pine & Berrien Sts., Albion, Mich.
Yale & Towne Mfg. Co., The, Roosevelt Ave. & Haldeman Ave., Philadelphia 15, Pa.

PALMERS (See Shrinking Machines)

PANELBOARDS

Fusible ..... **A**
Circuit breaker ..... **B**
Converti-Fuse—See General Electric Co., Trumbull Electric Dept.
General Electric Co., Trumbull Electric Dept., 41 Woodford Ave., Plainville, Conn. ..... A
Square D Company, 6060 Rivard St., Detroit 11, Mich. ..... A, B

PAPER—*Calender-Roll*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

PAPER—*Designing*

Finck Printing Service Inc., C. E., 157 Hudson St., New York, N. Y.
Jones & Co. Inc., Frederick, 406 Race St., Philadelphia 6, Pa.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.

PAPER—*Transparent*

Gates Co., N. H., Textile Packagings Dept., Fifth & Chestnut St., 801 Drexel Bldg., Philadelphia, Pa.
Milprint, Inc., 4200 North Holton St., Milwaukee 1, Wis.
Shellmar Products Co., Mount Vernon, Ohio
Sylvania Div., American Viscose Corp., 1617 Pennsylvania Blvd. Philadelphia 3, Pa.

PAPER—*Waterproof Wrapping*

Central Paper Co., 2440 Lakeshore Drive, Muskegon 28, Mich.
Dryseal—See Edgewater Paper Co.
Edgewater Paper Co., 306 Garfield Ave., Menasha, Wis.
Filreen—See Sisalkraft Co., The
Gates Co., N. T., Textile Packagings Dept., Fifth & Chestnut St., 801 Drexel Bldg., Philadelphia, Pa.
GAYLORD CONTAINER CORP., 111 North Fourth St., St. Louis 2, Mo. ADV. PG. 240.
Rexford Paper Co., 3100 West Mill Rd., Milwaukee 9, Wis.
Sisalkraft Co., The, 205 West Wacker Dr., Chicago 6, Ill.
Water-Tite—See Rexford Paper Co.

PAPER—*Wrapping & Baling*

Blauvelt-Wiley Paper Co., 65 Bleeker St., New York, N. Y.
Central Paper Co., 2440 Lakeshore Drive, Muskegon 28, Mich.
Edgewater Paper Co., 306 Garfield Ave., Menasha, Wis.
GAYLORD CONTAINER CORP., 111 North Fourth St., St. Louis 2, Mo. ADV. PG. 240.
Milprint, Inc., 4200 North Holton St., Milwaukee 1, Wis.
Nashua Gummed & Coated Paper Co., 1935 Clark St., Nashua, N. H.

PARAFFIN

Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Sinclair Refining Co., 600 Fifth Ave., New York 20, N. Y.

PARANITRANILINE

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio

PARAPHENYLENEDIAMINE

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio

PEARL ASH—(See Potassium—Salts of—Carbonate)

PENETRANTS (See also Wetting Agents)

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
American Aniline & Extract Co., Venango & F Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Colloids, Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, New Jersey
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Conshohocken, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa.
ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J.
ADV. PG. 281.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
SIDDALL CO., GEORGE F., Spartanburg, S. C.
ADV. PG. 286.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

PERCHES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
COOK-P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CRA—See Cutting Room Appliances Corp.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Cutting Room Appliances Corp., 45 West 25 St., New York 10, N. Y.
DURRANT & SONS, LTD., D., Stockport, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass.
ADV. PG. 162.
Gessner Co., David, 41 Freemont St., Worcester 3, Mass.
Menschner, Rossweiner, Johannes, Mashineu Fabrick A-G, Dulken/Rhld., Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. ..... A,B, C
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
PLASTIC INDUSTRIES, INC., Athens, Tenn.
ADV. PG. 168.
Windle Machine Works, North Grafton, Mass.
Livesey Ltd., Henry, England, Repr. by Trumeter Co., 1265 Broadway, New York 1, N. Y.

PEROXIDES (See Hydrogen Peroxide or Sodium—Salts of—Peroxide)

PHENOL (See Acids—Carbolic)

PHENYLEMTHYLPYRAZOLONE (See Developers)

PHOSPHATES (See under individual headings: Calcium, Potassium, Sodium—Salts of, etc.)

PHOSPHORIC ACID (See Acids)

PHTHALIC ANHYDRIDE

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio

PICK CLOCKS (See Counters—Loom-Pick)

PICKERS—*Burr*

Atlas—See Curtis & Marble Machine Co.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
Goddard—See Curtis & Marble Machine Co.
Parkhurst—See Curtis & Marble Machine Co.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.
ADV. PG. 127.

PICKERS—*Cotton*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Gerry & Son, George, 1709 Main St., Athol, Mass.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 113.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Whitin Machine Works, Whitinsville, Mass.

PICKERS—*Fearnaught*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.

PICKERS—*Loom*

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185.
Bancroft Belting Co., 145 High St., Boston 10, Mass.
Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
Bullard Clark Co., The, E. H., Jacobs Northern Div., Danielson, Conn.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio.
GARLAND MFG. CO., Saco, Me. ADV. PG. 158.
Gatke Corp., Industrial Dept., 246 North LaSalle St., Chicago 1, Ill.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hardwood Mfg. Co., Inc., P. O. Box 929, Greenville, S. C.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
Pickmaster—See Graton & Knight Co.
Schieren Co., Charles A., 30-38 Ferry St., New York 7, N. Y.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Super-Stroke—See Norris Bros. Mfg. Co.
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y.
TERRELL MACHINE CO., INC., THE, 3000 South Boulevard, P. O. Box 928, Charlotte 1, N. C. ADV. PG. 171.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Truche Leather Co., Peabody, Mass.
Tru-Le-Co—See Truche Leather Co.
Warren Belting Co., 33 Arctic St., Worcester 8, Mass.
Windmill—See Techno Exports

PICKERS—*Mixing*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 114.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Whitin Machine Works, Whitinsville, Mass.

PICKERS—*Rag & Shoddy*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Gerry & Son, George, 1709 Main St., Athol, Mass.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 116.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
Whitin Machine Works, Whitinsville, Mass.

PICRIC ACID (See Acids)

PIGMENTS—*Dyeing & Binders*

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio ADV. PG. 278.
INTERCHEMICAL CORP., TEXTILE COLORS DIV., 150 Wagaraw Rd., Hawthorne, N. J. ADV. PG. 268, 269.
Kohnstamm & Co., Inc., H., 83-93 Park Pl., New York 7, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio
Stein, Hall & Co. Inc., 85 Madison Ave., New York 17, N. Y.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

PIGMENTS—*Printing & Binders*

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Filo Color & Chemical, 202 East 44th St., New York 17, N. Y.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio ADV. PG. 278.
Harshaw Chemical Co., 1945 East 97 St., Cleveland, Ohio
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
INTERCHEMICAL CORP., TEXTILE COLORS DIV., 150 Wagaraw Rd., Hawthorne, N. J. ADV. PG. 268, 269.
Kohnstamm & Co., Inc., 83-93 Park Pl., New York 7, N. Y.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
New York Color & Chemical Co., 374 Main St., Belleville, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio
Stein, Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

PILERS—*Bin*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
du Pont de Nemours & Co., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.

PILERS—*Kier*

Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.

PILERS—*Knit-Cloth*

UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

PIN BOARDS (See Boards—Pin)

PIN DRAFTERS & GILL REDUCERS

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Holdsworth Gill Screw Co., 55 Sabin St., Pawtucket, R. I.
ISOTTA FRASCHINI, Milan, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
RIETER & CO., Germany—Repr. by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SANT' ANDREA, Novara, Italy, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
WARNER & SWASEY CO., THE, 5701 Carnegie Ave., Cleveland 3, Ohio. ADV. PG. 76, 77.
Whitin Machine Works, Whitinsville, Mass.

PINE OIL (See Oil—Natural)

PINIONS (See Gears & Pinions—Non-Metallic)

PINKING MACHINES

Chandler Machine Co., Ayer, Mass.

PINS

Card ..... A
Cradle ..... B
Drying C
Fiber Binder ..... D
Gill-Faller (See Fallers—Gill)
Hackle ..... E
Lap ..... F
Picker ..... G
Tenter ..... H

BAGSHAW CO., W. H., Mill 5-Pine St., Nashua, N. H. A, C, G, H ADV. PG. 160.
Barnes Co., Henry K., 8 Irving St., Salem, Mass. A, G, H
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. D ADV. PG. 88, 89.
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C. A, C, F, G, H
FLEMING, BIRKBY (PINS) LTD., Brighouse, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. A, B, C, D, E, F, G, H ADV. PG. 162.
GENERAL INDUSTRIES, INC., Putnam, Conn. A, C, ADV. PG. 222. E, G, H
Gerry & Son, George, 1709 Main St., Athol, Mass. G
Greenville Belting Co., Bramlett Rd., Greenville, S. C. D
Harding Rhodes & Co., Leeds, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston (6), Mass. A
Hetherington & Sons, Inc., John, Gastonia, N. C. A
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa. A, G, H
Hunter Mach. Co., James, North Adams, Mass. H
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. D ADV. PG. 199.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. H ADV. PG. 100.
REED CO., ROBERT C., 370 Seventh Ave., New York 1, N. Y. A, F, G, H ADV. PG. 222.
Roberts Company, P. O. Box 931, Sanford, N. C. B
Schmauser, Leonhard, Schwabach, Germany, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York, N. Y. A, C, D, F, G, H
Smith & Son, F. E., Gastonia, N. C. F
SPAULDING FIBRE CO., 310 Wheeler St., Tonawanda, N. Y. D ADV. PG. 103.
TODD-LONG PICKER APRON CO., Gastonia, N. C. A, F ADV. PG. 236.
Trinacria Specialty Mfg. Co., Norwich, Conn. A, C, D, F, G, H
Wakefield—See Lead Lined Iron Pipe Co.
Whitin Machine Works, Whitinsville, Mass. A, B, F, G, H
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. H ADV. PG. 90.

PIPE—*Acid-Resisting Alloy*

Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass.

PIPE—*Brass & Copper*

American Brass Co., The, Waterbury 88, Conn.
National Copper & Smelting Co., 1862 East 123rd St., Cleveland 6, Ohio

PIPE—*Cast Iron & Steel*

Pittsburgh Tube Co., 212 Wood St., Pittsburgh 22, Pa.

PIPE—Copper (See Pipe—Brass & Copper)

PIPE—Corrosion-Resisting Alloy Pipe & Tubing

Atlas Mineral Prods. Co., Mertztown, Pa.
CARPENTER STEEL CO., THE, ALLOY TUBE DIV., Union, N. J. ADV. PG. 196.
Cherry-Burrell Corp., 427 West Randolph St., Chicago 6, Ill.
Eastern Stainless Steel Corp., Baltimore 3, Md.
Enduro—See Republic Steel Corp.
Globes Steel Tubes Co., Milwaukee 46, Wis.
Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill.
National Carbon Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
U. S. S.—See United States Steel Corp.

PIPE—Nickel (See Pipe—Corrosion-Resisting Alloy)

PIPE—Plastic Pipe & Fittings

Ampcoflex—See Atlas Mineral Prods. Co.
Appcolite—See Atlas Mineral Prods. Co.
Atlas Mineral Prods. Co., Mertztown, Pa.
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich.

PIPE—Rubber-Lined

Carolina Rubber Hose Co., Salisbury, N. C.

PIPE—Steel (See Pipe—Wrought Iron & Steel)

PIPE—Wrought Iron and Steel

Globe Steel Tubes Co., Milwaukee 46, Wis.
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill.
Taylor Forge & Pipe Works, P. O. Box 485, Chicago 90, Ill.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.

PIRNS (See Bobbins)

PLAITING MACHINES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chandler Machine Co., Ayer, Mass.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Monforts, A. M., Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

PLASTIC COATING FOR MACHINE PARTS (See Commission Services)

PLASTICIZERS (See also Softeners)

American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa.
AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio.
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eastman Chemical Products, Inc., Kingsport, Tenn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio ADV. PG. 278.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa.
Plastolein—See Emery Industries, Inc.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
U. S. Industrial Chemicals Co., 120 Broadway, New York 5, N. Y.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.

PLASTICS & RESINS

Acrylics ..... A
Alkyds ..... B
Cellulosics (Acetate, Nitrate, etc.) C
Coumaroneindene ..... D
Formaldehyde (Melamine, Phenolic, Urea) ..... E
Organosilicon ..... F
Pinene ..... G
Polyamide ..... H
Polyethylene I
Protein ..... J
Rubber Elastomers ..... K
Styrenes L
Tetrafloroethylene ..... M
Vinyl & Polyvinyl ..... N

Alathen—See du Pont De Nemours & Co. (Inc.), E. I.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y. ..... D, E
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa. ..... N
American Aniline & Extract Co., Venango & F Sts., Philadelphia 34, Pa. ..... A, N
American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J. ..... E
AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Resinous Chem. Corp., 102 Foster St., Peabody, Mass. ..... A, K, L, N
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ..... A ADV. PG. 283.
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa. ..... K
Bakelite Co. Div., Union Carbide & Carbon Corp., 300 Madison Ave., New York 17, N. Y. ..... E, I, L, N
Bryant Chemical Corp., 6 North St., North Quincy, Mass. ..... E, J, N
Butaprene—See Firestone Tire & Rubber Co.
Catalin Corp. of America, 1 Park Ave., New York, N. Y. ..... E, L
Celanese Corp. of America, Chemical Div., 150 Madison Ave., New York 16, N. Y. ..... E
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. ..... A, N
Colton Chemical Co., 1545 East 18th St., Cleveland, Ohio ..... N
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J. ..... E
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ..... C, E ADV. PG. 88.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio ..... N
Dow Chemical Co., Midland, Mich. ..... C, F, L, N
du Pont De Nemours & Co. (Inc.), E. I., Plastics Sales Section, Polychemicals Dept., Wilmington, Del. ..... A, H, M, N
Durathene Corp., 1859 South 55th Ave., Chicago 50, Ill. ..... I, N
Durez Plastics & Chemicals Inc., 62 Walck Rd., North Tonawanda, N. Y. ..... E
Eastman Chemical Products, Inc., Kingsport, Tenn. C
Eimer & Amend 635 Greenwich St., New York 14, N. Y. ..... E
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J. ..... B, J
Exon—See Firestone Tire & Rubber Co.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa. ..... N
Firestone Plastics Co., Chemical Sales Div., Pottstown, Pa. ..... K, L, N
Firestone Tire & Rubber Co., 1200 Firestone Pkway., Akron, Ohio ..... J, L
Flintkote Co., The, Ind. Prods. Div., 3 West 46th St., New York 20, N. Y. ..... K
General Electric Co., Chemical Div., Pittsfield, Mass. ..... B, E, K
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., East Ninth & Prospect, Cleveland 15, Ohio ..... N ADV. PG. 278.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del. C
Hysol—See Houghton Laboratories, Inc.
Jones-Dabney Co., 1481 S. 11th St., Louisville 10, Ky. ..... B, E, L
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa. L
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ..... A, N ADV. PG. 284.
Libbey-Owens-Ford Glass Co., Plaskon Div., Nicholas Bldg., Toledo 3, Ohio ..... B
Lucite—See E. I. du Pont de Nemours & Co. (Inc.)
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I. ..... E
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. ..... C, E, L, N
Monsanto Chemical Co., Plastic Div., Springfield, Mass. ..... C, E, L, N
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y. ..... K, N
National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y. ..... C, N
Nitrogen Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y. ..... E
Nopco Chemical Co., First & Essex Sts., Harrison, N. J. ..... A, H, N
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J. ..... A, B, E, F, L, N
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ..... A, B, E, K, N ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa. ..... A, B, E, K, N
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y. ..... B, E, L, N
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa. ..... A, B
ROHM & HAAS CO., INC., 222 W Washington Sq., Philadelphia 5, Pa. ..... A, E ADV. PG. 273.
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill. ..... E
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y. ..... E
Scher Bros., 519 Getty Ave., Clifton, N. J. ..... B
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa. ..... N
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N. Y. ..... N
Sherwin-Williams Co., The, 101 Prospect Ave., N. W., Cleveland 1, Ohio ..... N
SPAULDING FIBRE CO., 310 Wheeler St., Tonawanda, N. Y. ..... E ADV. PG. 103.
Stein, Hall & Co., Inc., 285 Madison Ave., New York 17, N. Y. ..... E, J, N
Swift & Company, 4115 Packers Ave., Chicago 9, Ill. ..... J, N
Teflon—See du Pont de Nemours & Co. (Inc.), E. I.
Synthane Corp., Textile Div., Oaks, Pa. ..... E
U. S. Industrial Chemicals Co., 120 Broadway, New York 5, N. Y. ..... B, C
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y. ..... K, L, N
U. S. Stoneware Co., The, Akron 9, Ohio ..... N
Vinac—See Colton Chemical Co.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y. ..... B, D, E, F
Vinol—See Colton Chemical Co.
Watson-Park Co., Ballardvale, Mass. ..... E
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N. J. L

PLASTICS & RESINS—Extrusions & Mouldings

Bakelite Co. Div., Union Carbide & Carbon Corp., 300 Madison Ave., New York 17, N. Y.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I.
GLADWIN PLASTICS CO., 275 Houston St., N. E., Atlanta, Ga. ADV. PG. 250.
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
Linde Air Products Co., Div. of Union Carbide and Carbon Corp., 30 E. 42nd St., New York 17, N. Y.
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio

PLASTIC INDUSTRIES, INC., Athens, Tenn. ADV. PG. 168.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich.
Synthane Corp., Textile Div., Oaks, Pa.
Tygon—See U. S. Stoneware Co., The

PLATES—*Heating & Cooling*

Chromalox—See Wiegand Co., Edwin L.
Miskella Infra-Red Co., East 73rd at Grand Ave., Cleveland 4, Ohio
Tranter Mfg. Inc., 735 East Hazel St., Lansing, Mich.
Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.

PLATES—*Steel or Stainless Steel* (See Steel)

PLATES & PULLEYS—*Magnetic Separators*

Eriez Mfg. Co., 1425 Grove Dr., Erie, Pa.
High-Duty—See Stearns Magnetic, Inc.
Stearns Magnetic, Inc., 646 South 28th St., Milwaukee 46, Wis.

PLATING—*Chromium*, etc. (See Commission Services)

PLEATING MACHINES

Chandler Machine Co., Ayer, Mass.

POINTS—*Full-Fashioned Narrowing & Picot*

Hofmann Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J.
Ives Co., Loyal T., 19 Water St., New Brunswick, N. J.
Royersford Needle Works, Inc., Royersford, Pa.

POINTS—*Transfer*

Hofmann Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J.
Ives Co., Loyal T., 19 Water St., New Brunswick, N. J.
Royersford Needle Works, Inc., Royersford, Pa.

POLES—*Drying*

BRIGGS-SHAFFNER CO., P. O. Box 188, Winston Salem, N. C. ADV. PG. 214.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Rossweiner, Johannes; Menschner; Mashineu Fabrick A-G, Dulken/Rhld., Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
National Drying Machine Co., Inc., N. E. Cor. Hancock St. & Lehigh Ave., Philadelphia 33, Pa.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes-Barre, Pa. ADV. PG. 229.

POLYESTER YARNS & FIBERS (See Yarns & Fibers)

POLYETHYLENE YARNS & FIBERS (See Yarns & Fibers)

POLISHERS—*Floor* (See Floor Cleaning, Sanding, Scrubbing & Polishing, etc.)

PORCUPINES

Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.
Notheefer, Germany, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Thomas & Co., Charles, Mulhome, France, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
SANT' ANDREA, Novara, Italy, Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.

POTASSIUM—*Salts of*

Acetate ..... **A**
Bichromate ..... **B**
Bisulfite ..... **C**
Carbonate ..... **D**
Chlorate ..... **E**
Chromate ..... **F**
Cyanide ..... **G**
Ferricyanide (Yellow Prussiate of Potash ..... **H**
Ferricyanide (Red Prussiate of Potash) ..... **I**
Hydroxide (Caustic Potash) ..... **J**
Perchlorate ..... **K**
Permanganate ..... **L**
Phosphates ..... **M**
Pyrophosphate ..... **N**

Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. . . A
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. ..... A
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y. ..... E, K
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio ..... F
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del. ..... G
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, B, C, D, E, F, G, H, I, J, K, L, M, N
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... B, C, D, E, F, G, H, I, J, K, L, M
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP., 40 Rector St., New York 6, N. Y. ..... A, B, D, J, L
ADV. PG. 267.
Koppers Co. Inc., Koppers Bldg., Pittsburgh 19, Pa. . G
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo. ..... A, B, C, D, E, F, G, H, I, J, L, M
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. ..... M, N
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo. ..... M, N
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. ..... J
Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N. Y. ..... B, F
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ..... D, J
ADV. PG. 274.
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. ..... M, N
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ..... J, M, N
ADV. PG. 287.

POTATO STARCH (See Starches—Natural)

POTENTIOMETERS—*pH Testing* (See Instruments—pH Indicator)

POTENTIOMETERS—*Recording* (See Instruments—Temperature Indicating & Recording)

POT-EYES

Ceramic ..... **A**
Metal ..... **B**
Synthetic ..... **C**

Burlington Engrg. Co. Inc., Graham, N. C. ..... B
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. B, C
ADV. PG. 120, 121.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. . . C
ADV. PG. 88, 89.
Cook & Co. Ltd., Manchester, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ..... A, C
Fleet Line—See Riggs & Lombard, Inc.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ..... B
ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass. ..... B
MITCHELL-BISSELL CO., Brunswick & Heil Aves., P. O. Box 250, Trenton 2, N. J. ..... A
ADV. PG. 215.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ..... B
ADV. PG. 153.
PAGE-MADDEN CO., INC., 76-96 Second St., Mineola, N. Y. ..... A
ADV. PG. 78, 79.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass. ..... B
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ..... B
ADV. PG. 146.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J. A, C
Trinacria Specialty Mfg. Co., Norwich, Conn. . . . A, B, C
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

POTS—*Rayon Spinning* .

Aluminum Co. of America, New Kensington, Pa.
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.

POWER UNITS—*Hydraulic & Pneumatic*

American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
Bellows Co., The, Akron 9, Ohio
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Ideal Machine Shops, Inc., Bessemer City, N. C.
Lewis & Co., J. W., Exchange St., Spartanburg, S. C.
Lummus Cotton Gin Co., Columbus, Ga.
Miller Motor Co., 2040 North Hawthorne, Melrose Park, Ill.
Minneapolis-Honeywell Regulator Co., Seventh & Grange St., Philadelphia 70, Pa.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wisc.
Revolvator Corp., 86th St. at Bergen Turnpike, North Bergen, N. J.
Standard Designers, Inc., P. O. Box 6218, Asheville, N. C.
TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis. ADV. PG. 240.

PREBOARDING MACHINES (See Hosiery Boarding & Preboarding Machines)

PREPARATION APPARATUS—*Size, Vat Paste, Gums, etc.*

National Cylinder Gas Co., The Girdler Co. Div., 224 East Broadway, Louisville, Kentucky
Votator—See National Cylinder Gas Co.

PRESSES—*Baling* (See Baling Presses)

PRESSING MACHINES—*Cloth*

AMERICAN SAFETY TABLE CO. INC., 224 Fifth Ave., New York, N. Y. ADV. PG. 162.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Pony—See Prosperity Co., The
Power Circle—See Prosperity Co., The
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
Seam-O-Matic—See Prosperity Co., The
United States Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

PRINTING ASSISTANTS (See under individual headings; Gums, Dextrin, Penetrants, Reducing Agents, Starches, etc.)

PRINTING MACHINES

Heliofast—See Waldron Corp., John
Menschner, Rossweiner, Johannes, Mashineu Fabrick A-G, Dulken/Rhld., Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y. ..... A, B, C
LIBERTY MACHINE CO., INC., 275 Fourth Ave., Paterson, N. J. ADV. PG. 182.
Monforts, A., M. Gladbach/Germany
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
Teximpex, A. B., Goteborg, Sweden—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

PRINTING MACHINES—*Selvedge*

Maag Bros. Ltd., Switzerland, Repr. by Trumeter Co., 1265 Broadway, New York 1, N. Y.

PRINTING THICKENERS (See also under Dextrin, Gums, Starches, etc.)

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.

Ambertex—See National Starch Products Inc.
AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Flotex—See National Starch Products Inc.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Kelco Co., 31 Nassau St., New York 5, N. Y.
LINDER & CO., 296 North Beacon St., Boston 35, Mass. ADV. PG. 286.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Stein, Hall & Co., Inc., 285 Madison Ave., New York 17, N. Y.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Tab-A-Tex—See Thurston & Braidich
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Tex Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J.
Thurston & Braidich, 286 Spring St., New York 13, N. Y.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

PROPHYLENE DICHLORIDE (See Solvents)

PROTEIN YARNS & FIBERS (See Yarns & Fibers)

PRUSSIAN BLUE (See Ferrous & Ferric—*Salts of*—Ferrocyanide)

PSYCHROMETERS (See Instruments—Wet-Bulb Hygrometer or Instruments—Humidity Indicating & Recording)

PULLERS—*Cloth*

COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.

PULLEYS—*Clutch* (See Clutches—Friction)

PULLEYS—*Iron, Steel, Wood & Ceramic*

Allen Warner Co., 40-44 Church St., Lowell, Mass.
American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa.
Arguto Oilless Bearing Co., 149 West Berkley St., Philadelphia, Pa.
Barry Steel Split—See Dick Co., R. J.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Continental Gin Co., Industrial Div., Birmingham, Ala.
Cox Foundry & Machine Co., 395 Cox Ave., S. W., Atlanta, Ga.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Dick Co., R. J., Sade St., Passaic, N. J.
Dickrope Sheaves—See Dick Co., R. J.
Dodge Mfg. Corp., Mishawaka, Indiana
Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex.
Hewitt Robins Inc., Rubber Div., 240 Kensington Ave., Buffalo 5, N. Y.
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—League Mfg. Co., G. F.
Meadows Mfg. Co., Murphy & Astor Aves., S. W., Atlanta, Ga.
National Plastics, Inc., P. O. Box 152, Knoxville 1, Tenn.
PAGE-MADDEN CO., INC., 76-96 Second St., Mineola, N. Y. ADV. PG. 78, 79.
Pyott Foundry & Machine Co., 332 North Sangamon St., Chicago 7, Ill.
Reeves Pulley Co., Columbus, Ind.
Roy & Son Co., B. S., 775 Southbridge St., Worcester 3, Mass.
Sprout, Waldron & Co., 100 Sherman St., Muncy, Pa.
Sure Grip—See Wood's Sons Co., T. B.
Taperlock—See Dodge Mfg. Corp.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.
United Iron Works Co., Pittsburgh, Kan.
Whitin Machine Works, Whitinsville, Mass.

PULLEYS—*Variable-Speed Motor*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Ideal—See Lovejoy Flexible Coupling Co.
Lewellen Mfg. Co., Columbus, Ind.
Lovejoy Flexible Coupling Co., 5000 West Lake St., Chicago 44, Ill.
Reeves Pulley Co., Columbus, Ind.

PULLEYS—*Tape Tension*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
S K F Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa.

PUMPS

Boiler Feed ..... **A**
Centrifugal ..... **B**
Corrosion-Resistant ..... **C**
Deep Well (See Pumps—Centrifugal)
Gas ..... **D**
Piston & Plunger ..... **E**
Rotary Displacement ..... **F**
Sump (See Pumps—Centrifugal)
Turbine Type (See Pumps—Centrifugal)
Vacuum ..... **G**

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass. B, G
Adjust-O-Feeder—See Proportioneers, Inc.
Aldrich Pump Co., The, 1 Pine St., Allentown, Pa. A, C, E
Allen-Sherman-Hoff Pump Co., 259 East Lancaster Ave., Wynnewood, Pa. B, C
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244. B
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis. B, C, E, G
American Engineering Co., Aramingo Ave. & Cumberland St., Philadelphia 25, Pa. E, F
American Marsh Pumps Inc., 60 Capital Ave., Battle Creek, Mich. A, B, C, E, G
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. B
ADV. PG. 156.
Ampco Metal Inc., 1706 South 38th St., Milwaukee 46, Wis. B, C
Apco—See Aurora Pump Co.
Aurora Pump Co., 1520 Loucks St., Aurora, Ill. A, B, C
B. J.—See Byron Jackson Co.
Barrett Haentjens & Co., Hazleton, Pa. B, C
Beach Russ Co., 50 Church St., New York 7, N. Y. D, F, G
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106. G
Blackmer Pump Co. Inc., 1809 Century Ave., S. W., Grand Rapids, Mich. F
Buffalo Pumps, Inc., 490 Broadway, Buffalo, N. Y. C
Buffalo Pumps, Inc., 490 Broadway, Buffalo, N. Y. A, B
C. P.—See Beach Russ Co.
Central Scientific Co., 1700 West Irving Park Rd., Chicago 13, Ill. G
Chain Belt Co., 4778 West Greenfield Ave., Milwaukee 1, Wis. B
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill. B, C, F
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. D, F, G
Columbus Steam Pump Works Co., 724 West Gay St., Columbus 8, Ohio A, B, C, E, G
Creamery Package Mfg. Co., The, 1243 West Washington Blvd., Chicago 7, Ill. F
Dayton Electric Mfg. Co., 126 South Oakley Blvd., Chicago 12, Ill. B
Dean Brothers Pumps, Inc., 323 West Tenth St., Indianapolis 7, Ind. A, B, C, E, G
Dean Hill Pump Co., 4000 E. 16th St., Indianapolis, Ind. A, B, C
De Laval Steam Turbine Co., 853 Nottingham Way, Trenton, N. J. A, B, C, F
Deming Co., The, Salem, Ohio A, B, E, F
Roots-Connersville Blower Div., Dresser Industries, 900 West Mount St., Connersville, Ind. D, G
Durcopump—See Duriron Company
Duriron Company, Dayton 1, Ohio B, C
EASTERN INDUSTRIES INC., 296 Elm St., New Haven, Conn. B, C, F
ADV. PG. 159.
Eco Engineering Co., 12 New York Ave., Newark 1, N. J. C, F
Econofeed—See Hapman-Dutton Co.
EISLER ENGINEERING CO., INC., 750 South 13th St., Newark 3, N. J. G
ADV. PG. 238.
Electrifucal—See Allis-Chalmers Mfg. Co.
Ertel Engineering Corp., Kingston 12, N. Y. B, C, F
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill. A, B, C, D, E, F, G
Flow-Master—See Marco Co.
Foster Pump Works, Inc., 50 Washington St., Brooklyn 1, N. Y. C, F, G
Frederick Iron & Steel Co., Frederick, Md. A, B, C
Fuller Co., Fuller Bldg., Catasaqua, Pa. G
Gardner-Denver Co., Quincy, Ill. A, B, C, G
Goulds Pumps, Inc., 300 Falls St., Seneca Falls, N. Y. A, B, C, E, F
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich. A
Haveg Corp., Newark, Del. C
Hele-Shaw—See American Engineering Co.
Hydramite—See American Engineering Co.
Hydroseal—See Allen-Sherman-Hoff Pump Co.
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. A, B, C, G
Jabsco Pump Co., 2031 North Lincoln St., Burbank, Cal. C, F
Jackson Co., Byron, P. O. Box 2017, Terminal Annex, Los Angeles 54, Calif. A, B
JOHNSON CORP., THE, Three Rivers, Mich. A
ADV. PG. 253.
Lawrence Pump & Engine Co., Canal & Marston Sts., Lawrence, Mass. A, B, C
Lawrence Pumps Inc., 371 Market St., Lawrence, Mass. B, C
Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass. B, C
Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo. E
LOGEMANN BROTHERS CO., 3104 West Burleigh St., Milwaukee, Wis. E
ADV. PG. 231.
Luzerne Rubber Co., Mulrhead & Dewey Sts., Trenton 7, N. J. C
M-K-O—See Mears-Kane-Ofeldt, Inc.
Marco Co., 14 Third St., Wilmington 50, Del. C, F
Mears-Kane-Ofeldt, Inc., Bridgeport, Pa. A
Morton Machine Works, Columbus, Ga. B, C, G
Moyno—See Robbins & Myers, Inc.
Nash Engineering Co., Wilson Rd., South Norwalk, Conn. A, C, D, F, G
National Lead Co., 111 Broadway, New York 6, N. Y. C
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis. E, F
Peerless Pump Div., Food Machy. & Chem. Corp., 301 West Ave., Los Angeles 31, Cal. A, B, C
Pennsylvania Pump & Compressor Co., P. O. Box 222, Easton, Pa. A, B, G
Pomona—See Fairbanks-Morse Co.
Proportioneers, Inc., 345 Harris Ave., Providence 1, R. I. A, C, E
R. P.—See Beach Russ Co.
Resisto Pipe & Valve Co., 262 Bridge St., Cambridge 41, Mass. C
Rex—See Chain Belt Co.
Robbins & Myers, Inc., 1930 Clark Blvd., Springfield, Ohio A, C, G
Sanitary—See Waukesha Foundry Co., Pump Div.
Scott & Co. Inc., Ernest, 189 Anawan St., Fall River, Mass. E, G
Scott & Williams, Inc., 350 Fifth Ave., New York 1, N. Y. A, C, D, E
Shriver & Co., T., 852 Hamilton St., Harrison, N. J. C
Sli-Not Belting Corp., Box 3061, Greensboro, N. C. A, B, E, F
Swaby Mfg. Co., 3818 West Armitage, Chicago 47, Ill. B
Teel—See Dayton Electric Mfg. Co.
Thrustree—See Pennsylvania Pump & Compressor Co.
Tri-Clover Machine Co., 2400 60 St., Kenesha, Wis. B, C
National Carbon Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. C
Vickers, Inc., 1588 Oakman Blvd., Detroit 22, Mich. E, F
Viking Pump Co., 406 State St., Cedar Falls, Iowa F
Vilter Manufacturing Co., 2217 South First St., Milwaukee 7, Wis. F
Vortex—See Lawrence Pump & Engine Co.
Wakefield—See Lead Lined Iron Pipe Co.
Warren Steam Pump Co., Warren, Mass. A, B, C, E, F, G
Waterous Co., Process Pump Div., 80 E. Fillmore Ave., St. Paul 1, Minn. C, F
WAUKESHA FOUNDRY CO., PUMP DIV., Waukesha, Wis. C, F
ADV. PG. 194.
Weinman Pump Manufacturing Co., 290 Spruce St., Columbus 8, Ohio A, B, C
Westco—See Fairbanks-Morse Co.
Wheeler Mfg. Co., C. H., Lehigh & Sedgley Aves., Philadelphia 32, Pa. A, B, G
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J. A, B, C, E, F, G

PURIFIERS—*Water* (See also Water Treatment—Water Softening Equipment)

Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Graver Water Conditioning Co., 216 West 14 St., New York 11, N. Y.
Permutit Co., 330 West 42 St., New York 36, N. Y.
Proportioneers, Inc., 345 Harris Ave., Providence 1, R. I.
Roberts Filter Mfg. Co., 636 Columbia Ave., Darby, Pa.

PYRIDINE (See Solvents)

PYROLIGNITE OF IRON (See Ferrous & Ferric—Salts of)

PYROMETERS (See Instruments—Temperature Indicating & Recording)

PYROXYLIN (Nitrocellulose)

du Pont de Nemours & Co., Inc., E. I., Explosives Dept., Wilmington 98, Del.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del.
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio

QUENCH BOXES (See Tanks)

QUETSCHES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
HUNT-MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. ADV. PG. 130, 131.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Johnson Machine Works, Charles B., Paterson, N. J.
TEXTILE SHOPS, Spartanburg, S. C. ADV. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Tube-Tex—See Tubular Textile Machinery Corp.
TUBULAR TEXTILE MACHINERY CORP., 33-61 54th St., Woodside, N. Y. ADV. PG. 145.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verdun Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co. 183 Autumn St., Passaic, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

QUILL-POLISHING MACHINES

Nash Company, J. M., 2365 North 30th St., Milwaukee 10, Wis.

QUILL-STRIPPING MACHINES (See Cleaners—Bobbin & Quill)

QUILLERS—(See Winders—Filling-Bobbin)

QUILLS (See Bobbins)

QUILTING MACHINES

Kaybe Mfg. Co., 770 Lexington Ave., Brooklyn 21, N. Y.
Radio Receptor Co., 251 West 19 St., New York 11, N. Y.

RACKS—*Storage* (See Shelves—Bins & Racks or Beam Storage Racks)

RAG DYEING MACHINES (See Dyeing Machines—Raw Stock)

RAG PICKERS (See Pickers—Rag & Shoddy)

RAISING MACHINES (See Nappers)

RANGES—*Bleaching* (See Bleaching Machines)

RANGES—*Carbonizing* (See Carbonizers—Piece Goods)

RANGES—*Dyeing* (See Dyeing Machines—Piece Goods)

RANGES—*"Sanforized"* (See "Sanforized" Machines)

RANGES—*Splitting & Extracting* (Knit Goods)

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass., ADV. PG. 106.

RASCHEL MACHINE (See Knitting Machines)

RAYON OILS (See Oils—Fiber Process)

RAYON SIZINGS—(See Sizing Agents)

RAYON YARNS & FIBERS (See Yarns & Fibers)

RECORDERS (See Instruments for all Types)

RED OIL (See Acids—Fatty, Oleic)

RED PRUSSIATE (See Potassium—Salts of)

REDRAW FRAMES (See Throwing Machines)

"REDMANIZED" EQUIPMENT

PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.

REDRAW FRAMES

Fletcher Wks., Inc., Glenwood Ave. & Second St., Philadelphia, Pa.

REDUCERS—*Gear* (See Motors—Gear)

REDUCERS—*Speed* (See also Transmissions—Variable-Speed)

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
American Pulley Co., The, 4200 Wissahickon Ave., Philadelphia 29, Pa.
Boston Gear Wk. Inc., 14 Hayward St., North Quincy 71, Mass.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Cleveland Worm & Gear Co., The, 3249 East 80th St., Cleveland 4, Ohio
Dodge Mfg. Corp., Mishawaka, Ind.
Earle Gear & Machine Co., The, 4707 Stenton Ave., Philadelphia 44, Pa.
Electra Motors, Inc., 1110 North Lemon St., Anaheim, Calif.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Falk Corp., 3001 West Canal St., Milwaukee, Wis.
Farrel-Birmingham Co., 25 Main St., Ansonia, Conn.
Heliocentric—See Universal Gear Corp.
Janette Electric Mfg. Co., Lehigh At Main, Morton Grove, Ill.
Lima Electric Motor Co., The, Findlay Rd., Lima, Ohio
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Mechanical Handling Systems, Inc., 4600 Nancy Ave., Detroit 12, Mich.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Ohio Gear Co., 1333 East 179th St., Cleveland, Ohio
Palmer-Bee Co., Westminster & G. T. R. R., Detroit 2, Mich.
Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa.
Reductors—See Boston Gear Wk. Inc.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Shaft-King—See American Pulley Co., The
Sterling Elec. Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.
United Iron Works Co., Pittsburg, Kan.
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.
Universal Gear Corp., 19th & Martindale Ave., Indianapolis 7, Ind.
Winsmith, Inc., Springville, N. Y.

REDUCERS—*Worsted* (See Roving Frames—Worsted)

REDUCING AGENTS

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Virginia Smelting Co., West Norfolk, Va.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

REED CLEANING MACHINES (See also Cleaners—Reed)

AFFUTEX, Copenhagen, Denmark, Repr. by: Edda International Corp., 468 Fourth Ave., New York 16, N. Y. ADV. PG. 92.
Carolina Loom Reed Co., P. O. Box 1536, Greensboro, N. C.
Greensboro Loom Reed Co., Inc., Greensboro, N. C.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Shawmut Engineering Co., 195 Freeport St., Boston 22, Mass.

REEDS—*Expansion* (See Combs—Expansion)

REEDS—*Lease* (See Reeds—Loom)

REEDS—*Loom*

Acme Loom Harness & Reed Co., Greenville, S. C.
Andrews Co., 189 Charles St., Spartanburg, S. C.
Beaded-Dent—See Andrews Co.
Carolina Loom Reed Co., P. O. Box 1536, Greensboro, N. C.
Carruthers Co., Robert, 12 Hale Ct., Lowell, Mass.
Diamond—See Knowles Loom Reed Wks.
Emmons Loom Harness Co., 7 May St., Lawrence, Mass.
Greensboro Loom Reed Co. Inc., Greensboro, N. C.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hudson Reed & Harness Co., 124 Leonard St., Jersey City 7, N. J.
Knowles Loom Reed Wks., 114 Myrtle St., New Bedford, Mass.
Lausberg & Sons, Inc., C. A., 351 Clinton St., Paterson, N. J.
Matthews Equipment Co., 93A Broadway, Providence, R. I.
PAVIA SHUTTLE CO., THE, 415-419 Auburn St., Allentown, Pa. ADV. PG. 200.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Pioneer Heddle & Reed Co., 1378 Murphy Ave., S. W., Atlanta, Ga.
Real Reads—See Southern Loom Reed Mfg. Co.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.

Southern Loom Reed Mfg. Co., Gaffney, S. C.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Textile Specialty Co., Box 1297, Greensboro, N. C.
Truweave—See Textile Specialty Co.

REEDS—*Metal* (See Reeds—Loom)

REEDS—*Pitch Band* (See Reeds—Loom)

REELERS—*Cloth* (See Winders—Cloth)

REELERS—*Skein* (See Reels—Skeining)

REELS—*Bleaching & Dyeing*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass., ADV. PG. 106.
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Burlington Engrg. Co. Inc., Graham, N. C.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Corning Glass Works, Corning, N. Y.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hinnekens Machine Co., Inc., 201 Godwin Ave., Paterson 1, N. J.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Morton Machine Works, Columbus, Ga.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia, Pa. ADV. PG. 132, 133.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

REELS—*Dresser*

Whitin Machine Works, Whitinsville, Mass.

REELS—*Inspection* (See Perches)

REELS—*Skeining* (See also Winders—Skein)

Adjust-O-Matic—See Atwood Crawford Co.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
FIDELITY MACHINE CO., INC., 3908-18 Frankford Ave., Philadelphia, Pa. ADV. PG. 99.
Johnson & Bassett, Inc., 114 Foster St., Worcester, Mass.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

REGULATORS—*Condenser Water* (See Controls—Fluid-Flow)

REGULATORS—*Damper & Draft*

Hagan Corp., Hagan Bldg., Pittsburgh, Pa.

REGULATORS—*Humidity* (See Controls—Humidity)

REGULATORS—*Motor Speed* (See Controls—Automatic & Manual)

REGULATORS—*Pressure* (See Controls—Pressure & Vacuum)

REGULATORS—*Rate-of-Flow* (See Controls—Fluid-Flow)

REGULATORS—*Slasher Roll Pressure*

Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass.
Sucker, G.m.b.H., Gebruder, M. Gladbach/Rhineland, Germany
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.

REGULATORS—*Temperature* (See Controls—Temperature)

REGULATORS—*Vacuum* (See Controls—Pressure & Vacuum)

RELAYS (See Controls—Automatic & Manual Motor)

REPEATERS—*Jacquard Card* (See Jacquard Card-Cutting Machines)

RE-ROLLING MACHINES

Cameron Machine Co., 61 Poplar St., Brooklyn 2, N. Y.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
Hinnekens Machine Co., Inc., 201 Godwin Ave., Paterson 1, N. J.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.

RESIN-CURING MACHINES

Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Hunter Mach. Co., James, North Adams, Mass.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.
INDUSTRIAL OVENS INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Lanly Co., The, 750 Prospect, Cleveland, Ohio
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
ROSS ENGINEERING CORP., J. O., 444 Madison Ave., New York 17, N. Y. ADV. PG. 160.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Vapojet—See Hunter Mach. Co., James
WALDRON CORP, JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.

RESIN FINISHES (See Plastics & Resins)

RESORCINE

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Borden Co., The, 350 Madison Ave., New York, N. Y.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.

RETARDING AGENTS

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Carbide & Carbon Chemicals Co., Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scholler Brothers, Inc., Collins & Westmoreland Sts. Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

REVOLVING OR ROTARY JOINTS (See Joints—Revolving)

REWETTING AGENTS (See Wetting Agents)

REWINDERS (See Backwinders or Winders—Cloth)

RHEOSTATS—*Speed Regulating* (See Controls—Automatic & Manual Motor)

RIBBERS (See Knitting Machines—Ribbers)

RIBBON BLOCKING MACHINES (See Blocking Machines)

RIBBON LAPPERS (See Lappers—Ribbon)

RICE STARCH (See Starches—Natural)

RING-DOFFER CONDENSERS

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Houben, Theodore, Verviers, Belgium—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Klenk & Miller, Inc., 2800 Boudinot St., Philadelphia 34, Pa.
Whitin Machine Works, Whitinsville, Mass.

RINGS—*Guide* (See Guides—Thread)

RINGS—*Hydraulic* (See Packing—Rubber Fiber & Metallic Spiral & Ring)

RINGS—*Spinning & Twister*

Albrecht—See Merriman Bros., Inc.
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy.
Crys-Steel—See Whitin Machine Works
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Diamond Finish—See Whitinsville Spinning Ring Co.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
HERR MFG. CO., INC., 309 Franklin St., Buffalo 2, N. Y. ADV. PG. 187.
KLUTTZ MACHINE & FOUNDRY CO., P. O. Box 71, Gastonia, N. C. ADV. PG. 236.
McKelvie Machine Co., 832-834 North Marletta St., Gastonia, N. C. ADV. PG. 236.
Merriman Bros., Inc., 185 Amory St., Boston 30, Mass.
Minor—See Draper Corp.
Pawtucket Spinning Ring Co., 138 Hunt St., Central Falls, R. I.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
RAGAN RING CO., 901 South Main St., East Point, Ga. ADV. PG. 246.
RIETER & CO., GERMANY—Repr. by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SANT' ANDREA, Novara, Italy, Repr. by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
Smith & Son, E. E., Gastonia, N. C.
Whitin Machine Works, Whitinsville, Mass.
Whitinsville Spinning Ring Co., Whitinsville, Mass.

RODS—*Corrosion-Resisting* (See Steel — Corrosion-Resisting)

RODS—*Electrode for Stop Motions*

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.

RODS—*Lap*

Atlanta Textile Machinery Co., 598 Means St. N.W., Atlanta, Ga.
Trinacria Specialty Mfg. Co., Norwich, Conn.

RODS—*Lease*

Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Greensboro Loom Reed Co., Inc., Greensboro, N. C.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
McKelvie Machine Co., 832-834 North Marletta St., Gastonia, N. C.
Noble Co., Roy, New Bedford, Mass.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Southern Loom Reed Mfg. Co., Gaffney, S. C.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.

RODS—*Split* (See Rods—Lease)

RODS—*Welt* (See Hooks—Welt)

ROLL-COVERING MACHINE

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio
Dronsfield Bros. Ltd., Atlas Works, King St., Oldham, England
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hetherington & Sons, Inc., John, Gastonia, N. C.

ROLL STANDS

Roberts Company, P. O. Box 931, Sanford, N. C.

ROLLS—*Brush*

COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Elmwood Brush Co., 20 John St., Hartford 6, Conn.
Fullanchor—See Fuller Brush Co., The, Industrial Div.
Fuller Brush Co., The, Industrial Div., 3594 Main St., Hartford 2, Conn.
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
MARTIN & SONS, INC., ADOLPH, 12-16 Linden St., Passiac, N. J. ADV. PG. 227.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
Whitin Machine Works, Whitinsville, Mass.

ROLLS—*Calender*

APPLETON MACHINE CO., 618 South Oneida, Appleton, Wis. ADV. PG. 126.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Farrel—See Farrel-Birmingham Co.
Farrel-Birmingham Co., 25 Main St., Ansonia, Conn.
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
Holyoke Machine Co., 505 Main St., Holyoke, Mass.
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. ADV. PG. 130, 131.
Norlander-Young Machine Co., York Rd., Gastonia, N. C.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Whitin Machine Works, Whitinsville, Mass.

ROLLS—*Clearer* (See Clearers—Flat & Revolving)

ROLLS—*Crush*

Lowell Shuttle Co., Tanner St., Lowell, Mass.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.

ROLLS—*Doffer*

TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.

ROLLS—*Drawing, Roving & Spinning*

Atlanta Textile Machinery Co., 598 Means St. N.W., Atlanta, Ga.
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Cleandraft—See Product Sales, Inc.
Climax—See Product Sales, Inc.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Dayton Rubber Co., The 2342 Riverview Ave., Dayton 7, Ohio
Dixie Spindle & Flyer Co., 1906 N. Brevard St., Charlotte 2, N. C.
Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I.
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.
Ideal Industries, Inc., Bessemer City, N. C.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
McCASKIE, INC., WM., Forge Road, Westport, Mass. ADV. PG. 208.
Norlander-Young Machine Co., York Rd., Gastonia, N. C.
PLATT BROS. & CO., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Product Sales, Inc., 21 Vernon St., Whitman, Mass.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Roberts Company, P. O. Box 931, Sanford, N. C.
S K F Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SANT' ANDREA, Novara, Italy, Repr. by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
Smith & Son, E. E., Gastonia, N. C.
SONOCO PRODUCTS CO., Hartsville, S. C. ADV. PG. 175.
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Wayne Mfg. Co., Honesdale, Pa.
Whitin Machine Works, Whitinsville, Mass.

ROLLS—*Embossing* (See Rolls—Calender)

ROLLS—*Fabric Transit* (See Cores)

ROLLS—*Feed* (See Feeders—Continuous-Roll)

ROLLS—*Finishing*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
Burlington Engrg. Co., Inc., Graham, N. C.
Carolina Rubber Hose Co., Salisbury, N. C.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Corning Glass Works, Corning, N. Y.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
Holyoke Machine Co., 505 Main St., Holyoke, Mass.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
Noble Co., Roy, New Bedford, Mass.
Shaf-Tite—See Hunt Machine Co., Rodney
Shenango Penn Mold Co., 1751 West Third St., Dover, Ohio
Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls 64, Mass.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence, 3, R. I. ADV. PG. 134, 135.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
White-Seal—See Hunt Machine Co., Rodney
Wiltex, Inc., 1340 East 222nd St., Cleveland 17, Ohio

ROLLS—*Fluted*

Medley Mfg. Co., Inc., 400 32nd St., Columbus, Ga.

ROLLS—*Fulling*

HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.

ROLLS—*Lap*

Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.

ROLLS—*Loom Cloth*

A & W Machine Co., P. O. Box 111, Charlton City, Mass.
McCASKIE, INC., WM., Forge Road, Westport, Mass. ADV. PG. 208.

ROLLS—*Printing*

Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls 64, Mass.
Verdun Machine Corp., John, 357 Tenth Ave., Paterson, N. J.

ROLLS—*Roving* (See Rolls—Drawing, Roving & Spinning)

ROLLS—*Rubber-Covered*

American Wringer Co., 212 Clinton St., Woonsocket, R. I.
ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa.
ADV. PG. 185.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass.
ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
BRIGGS-SHAFFNER CO., P. O. Box 188, Winston Salem, N. C. ADV. PG. 214.
Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa.
ADV. PG. 120, 121.
Carolina Rubber Hose Co., Salisbury, N. C.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood, Cincinnati 12, Ohio
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Fleet Line—See Riggs & Lombard, Inc.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
Goodall Rubber Co., 431 Whitehead Rd., Trenton 4, N. J.
Goodyear Tire & Rubber Co., 1144 East Market St., Akron, Ohio
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
JENKINS SONS, INC., M. W., Cedar Grove, N. J.
ADV. PG. 201.
Lee Rubber & Tire Corp., Republic Rubber Div., Youngstown 1, Ohio
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
McBRIDE, INC., EDWARD J., Cottman & Wissinoming St., Philadelphia 35, Pa. ADV. PG. 84, 85.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
No Markoff—See Stowe-Woodward, Inc.
Noble Co., Roy, New Bedford, Mass.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Quaker Rubber Corp. Div., H. K. Porter Co., Inc. of Pittsburgh, Tacony & Comly Sts., Philadelphia 24, Pa.
RIETER & CO., GERMANY—Repr. by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
Rice Barton Corp., 65 Taintor St., Worcester 1, Mass.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Roberts Company, P. O. Box 931, Sanford, N. C.
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich.
SARGENT'S SONS CORP., C. G., Graniteville, Mass.,
ADV. PG. 127.
Standard Transmission Equipment Co., 78 West Union St., Pasadena 1, Calif.
Sto-Prene—See Stowe-Woodward, Inc.
Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls 64, Mass.
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Verdun Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y.
ADV. PG. 155.

ROLLS—*Scavenger*

Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C.
GLADWIN PLASTICS CO., 275 Houston St., N.E., Atlanta, Ga. ADV. PG. 250.
Kincaid Engineering Co., 209 South Church St., Gastonia, N. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
Roberts Company, P. O. Box 931, Sanford, N. C.
Noble Co., Roy, New Bedford, Mass.
SONOCO PRODUCTS CO., Hartsville, S. C.
ADV. PG. 175.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Whitin Machine Works, Whitinsville, Mass.
White Seal—See Hunt Machine Co., Rodney

ROLLS—*Spinning* (See Rolls—Drawing, Roving, & Spinning)

ROLLS—*Squeeze* (See Quetsches)

ROLLS—*Temple* (See Temples—Loom)

ROLLS—*Top* (See Rolls—Drawing, Roving & Spinning)

ROLLS—*Twisting-Machine*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me.
ADV. PG. 176.
Medley Mfg. Co., Inc., 400 32nd St., Columbus, Ga.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

ROLLS—*Type of Material Used*

Chromium ..... **A**
Stainless Steel ..... **B**
Steel ..... **C**
Wood ..... **D**

HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ..... A, B, C, D
ADV. PG. 86, 87.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. A
ADV. PG. 155.

ROLLS—*Warper & Slasher*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass.
ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
Carolina Rubber Hose Co., Salisbury, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
MARTIN & SONS, INC., ADOLPH, 12-16 Linden St., Passaic, N. J. ADV. PG. 227.
Noble Co., Roy, New Bedford, Mass.
Shaf-Tite—See Hunt Machine Co., Rodney
Sizerite—See Stowe-Woodward, Inc.
Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls 64, Mass.
Sucker, G.m.b.H., Gebruder, M. Gladbach-Rhineland, Germany
TEXTILE SHOPS, Spartanburg, S. C.
ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
White Seal—See Hunt Machine Co., Rodney

ROPE MACHINES

HASKELL-DAWES MACH. CO. INC., 2231 East Ontario St., Philadelphia, Pa. ADV. PG. 204, 212, 220.

ROOFING MATERIALS

Arco Co., The, 7301 Bessemer Ave., Cleveland, Ohio
Carey Mfg. Co., Phillip, Wayne Ave., Cincinnati 15, Ohio
Fire-Chex—See Phillip Carey Mfg. Co.
Horn Co., Inc., A. C., 10th St. & 44th Ave., Long Island City 1, N. Y.
Jointite—See Mundet Cork Corp.
Midland Paint & Varnish Co., 9115 Rene Ave., Cleveland 5, Ohio
Monroe Co., Inc., The, 10701 Quebec Ave., Cleveland 6, Ohio
Mundet Cork Corp., 7101 Tonnelle Ave., North Bergen, N. J.
Rufferseallit—See Monroe Co., Inc., The
Rufferseal—See Monroe Co., Inc., The
Stonhard Co., 1306 Spring Garden St., Philadelphia 23, Pa.

ROPE—*Mule* (See Bands—Spinning & Twisting)

ROSIN

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Hercules Powder Co., Inc., 994 Market St., Wilmington 99, Del.

ROVING FRAMES (Cotton, Worsted, Rayon, Synthetic)

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Inter-Draft—See Whitin Machine Works
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.
SANT ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y.
ADV. PG. 117.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Super-Draft—See Whitin Machine Works
Whitin Machine Works, Whitinsville, Mass.

RUB APRON (See Aprons—Rub)

RUBBER COVERING MACHINES

Arnold Co., Inc., H. H., 529 Liberty St., Rockland, Mass.
INDUSTRIAL OVENS INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y.
ADV. PG. 198.
REITER & CO., GERMANY—Represented by American Reiter Co., Inc., P. O. Box 147, Arlington, N. J.
ADV. PG. 125.

RUBBING MACHINES

Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

RULERS—*Straight-Edge*

Fairgate Rule Co., 177 Pacific St., Brooklyn 2, N. Y

SADDLE WEIGHT MEASURER

Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I.

SADDLES & NEBS—*Lubricating*

Dixon Lubricating Saddle Co., Burnside St., Bristol, R. I.
Lo-Friction—See Dixon Lubricating Saddle Co.
Permalube—See Whitehead Engineering Co.
Roberts Company, P. O. Box 931, Sanford, N. C.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Whitehead Engineering Co., 522 West Peachtree St., N.W., Atlanta, Ga.
Whitin Machine Works, Whitinsville, Mass.

SAFETY DEVICES and/or INFORMATION

National Safety Council, 425 North Michigan Ave., Chicago 11, Ill.

SAL SODA (See Sodium—Salts of—Chloride & Sulfate)

SALT (See Sodium—Salts of—Chloride & Sulfate)

SANDING MACHINES (See Floor Cleaning, Sanding, Scrubbing & Polishing Machines)

"SANFORIZED" ASSISTANTS

Albany Felt Co., 1373 Broadway, Albany 1, N. Y.
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
Emkay Chemical Co., 319-225 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nooco Chemical Co., First & Essex Sts., Harrison, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Sun Chemical Corp., Warwick Chemical Co. Div., 10-10 44 Ave., Long Island City 1, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

"SANFORIZED" MACHINES

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa ADV. PG. 120, 121.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.

SATURATING MACHINES (See Impregnating Machines)

SARAN YARNS & FIBERS (See Yarns & Fibers)

SCAFFOLDS & LADDERS—*Portable*

BALLYMORE CO., Wayne 9, Pa. ADV. PG. 254.
Up-Right Scaffolds, 1013 Paradee St., Berkeley 2, Calif.

SCALES—*Bench* (See Scales—Counter & Platform)

SCALES—*Counter & Platform*

Bonded Scale & Machine Co., 79 Kingston, Columbus 7, Ohio
Buffalo Scale Co., 46 Letchworth St., Buffalo 13, N. Y.
Chatillon & Sons, John, 89 Cliff St., New York 38, N. Y.
Exact Weight Scale Co., 944 West Fifth Ave., Columbus 8, Ohio
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Howe Scale Co., The, Rutland, Vt.
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.

SCALES—*Dial* (See Scales—Counter & Platform)

SCALES—*Floor* (See Scales—Counter & Platform)

SCALES—*Hanging* (See Scales—Counter & Platform)

SCALES—*Laboratory*

Becker—See Torsion Balance Co.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Buffalo Scale Co., 46 Letchworth St., Buffalo 13, N. Y.
Central Scientific Co., 1700 West Irving Park Rd., Chicago 13, Ill.
Chainomatic—See Torsion Balance Co.
Christian—See Torsion Balance Co.
Exact Weight Scale Co., 944 West Fifth Ave., Columbus 8, Ohio
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
G. S.—See General Scientific Equip. Co.
General Scientific Equip. Co., 2760 West Huntingdon St., Philadelphia, Pa.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio
Torsion Balance Co., 35 Monhegan St., Clifton, N. J.
Troemner, Henry, 911 Arch St., Philadelphia 7, Pa.

SCALES—*Lap*

Chatillon & Sons, John, 89 Cliff St., New York 38, N. Y.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Howe Scale Co., The, Rutland, Vt.
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio

SCALES—*Monorail*

American Monorail Co., 13107 Athens Ave., Cleveland, Ohio
Buffalo Scale Co., 46 Letchworth St., Buffalo 13, N. Y.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Howe Scale Co., The, Rutland, Vt.
Louden Machinery Co., The, 607 Broadway, Fairfield, Iowa
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio
Webb Corp., Webb City, Mo.

SCALES—*Overhead Track* (See Scales—Monorail)

SCALES—*Predetermined-Weight*

Buffalo Scale Co., 46 Letchworth St., Buffalo 13, N. Y.
Chatillon & Sons, John, 89 Cliff St., New York 38, N. Y.
Exact Weight Scale Co., 944 West Fifth Ave., Columbus 8, Ohio
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Howe Scale Co., The, Rutland, Vt.
Richardson Scale Co., 668 Van Houten Ave., Clifton, N. J.
Speedweigh—See Toledo Scale Co.
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio
Webb Corp., Webb City, Mo.

SCALES—*Weight Printing & Recording*

Howe Scale Co., The, Rutland, Vt.
Teleprint—See Howe Scale Co., The
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio

SCALES—*Testing* (See Scales—Laboratory)

SCALES—*Truck & Track*

Bonded Scale & Machine Co., 79 Kingston, Columbus 7, Ohio
Buffalo Scale Co., 46 Letchworth St., Buffalo 13, N. Y.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Howe Scale Co., The, Rutland, Vt.
Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio
Webb Corp., Webb City, Mo.

SCHIFFLI MACHINES (See Embroidering Machines)

SCISSORS & SHEARS—*Mill*

Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Sciss-O-Matic—See Ginsberg Machine Co. Inc.
Wiss & Sons, J., 45 Littleton Avenue, Newark 7, N. J.

SCOURING AGENTS (See under individual headings; Detergents, Soaps, Wool-Scouring Agents, etc.)

SCOURING MACHINES—*Cloth*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Burlington Engrg. Co. Inc., Graham, N. C.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Fleet Line—See Riggs & Lombard, Inc.
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

SCOURING MACHINES—*Raw Stock*

COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Hunter Mach. Co., James, North Adams, Mass.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

SCOURING MACHINES—*Yarn*

Burlington Engrg. Co. Inc., Graham, N. C.
KLAUDER WELDON GILES CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
PETRIE & McNAUGHT, LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.

SCRAYS & CRADLES—*Cloth*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Roberts Company, P. O. Box 931, Sanford, N. C.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

SCREENS—*Card & Picker*

Buffalo Wire Works Co., 308 Terrace St., Buffalo, N. Y.
Gastonia Textile Sheet Metal Works, Gastonia, N. C.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Rushton-Carroll Co., 218 Auburn St., Cambridge 39, Mass.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Whitin Machine Works, Whitinsville, Mass.

SCREENS—*Lickerin* (See Screens—Card & Picker)

SCREENS—*Picker* (See Screens—Card & Picker)

SCREENS—*Waste Machine* (See Screens—Card & Picker)

SCREWS—(See Fasteners)

SCROOPING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

SCUTCHERS—*Cloth* (See Openers—Cloth)

SCRUBBERS—*Floor* (See Floor Cleaning, Sanding, Scrubbing & Polishing Machines)

SEALERS—*Bag*

Amsco Packaging Machinery, Inc., 31-31 48 Ave., Long Island City, N. Y.
Heat Seal-It Co., 4316 Lancaster Ave., Philadelphia, Pa.
Radio Receptor Co., 251 West 19 St., New York 11, N. Y.

SEALERS—*Carton* (See Wire Stitching Machines)

SEALS—*Bale* (See Strapping—Box & Carton)

SEALS—*Box* (See Labels—Box)

SEALS—*Steel Strapping* (See Strapping—Box & Carton)

SEAMERS (See also Sewing Machines)

Flatlock—See Willcox & Gibbs Sewing Machine Co.
MERROW MACHINE CO., THE, 2803 Laurel St., Hartford 6, Conn. ADV. PG. 147.
Willcox & Gibbs Sewing Machine Co., 214 West 39th St., New York 18, N. Y.

SELVAGE-LOOP CUTTING MACHINES (See Cutters—Selvage-Loop)

SEMI-DECATING MACHINES (See Decating Machines)

SEPARATORS—*Air, Oil, Steam & Water*

Airfuge—See Swartwout Company
Anderson Co., V. D., 1935 West 96th St., Cleveland, Ohio
Beach Russ Co., 50 Church St., New York 7, N. Y.
Clark Mfg. Co., The, 1830 East 38th St., Cleveland 14, Ohio
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Crane Co., 836 South Michigan Ave., Chicago 5, Ill.
Hagan Corp., Hagan Bldg., Pittsburgh, Pa.
JOHNSON CORP., THE, Three Rivers, Mich. ADV. PG. 253.
Joy Mfg. Co., Henry W. Oliver Bldg., Pittsburgh, Pa.
Rushton-Carroll Co., 218 Auburn St., Cambridge 39, Mass.
Spray Engineering Co., 114 Central St., Somerville 45, Mass.
Spraco—See Spray Engineering Co.
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio
Vilter Manufacturing Co., 2217 South First St., Milwaukee 7, Wis.

SEPARATORS—*Centrifugal* (See Extractors—Centrifugal)

SEPARATORS—*Magnetic*

Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Eriez Mfg. Co., 1425 Grove Dr., Erie, Pa.
General Electric Co., Carboloy Dept., Box 237, Roosevelt Park PO., Detroit, Mich.
High-Duty—See Stearns Magnetic, Inc.
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
Homer Mfg. Co. Div., The, Lima Armature Works, 142 East Pearl Ave., Lima, Ohio
Magnetic Engineering & Mfg. Co., 750 Van Houten Ave., Clifton, N. J.
Memco—See Magnetic Engineering & Mfg. Co.
Stearns Magnetic, Inc., 646 South 28th St., Milwaukee 46, Wis.

SEPARATORS—*Spinner*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Formica Co., 4614 Spring Grove Ave., Cincinnati, Ohio
Permalite—See Whitehead Engineering Co.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Smith & Son, E. E., Gastonia, N. C.
SPAULDING FIBRE CO., Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Wayne Mfg. Co., Honesdale, Pa.
Whitehead Engineering Co., 522 West Peachtree St., N. W., Atlanta, Ga.
Whitin Machine Works, Whitinsville, Mass.

SEQUESTRING AGENTS (See Wetting Agents or Water Treatment)

SETTERS—*Twist* (See Twist Setters)

SETTERS—*Woven-Fabric* (See Tenter Frames—Cloth)

SEWING MACHINES

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
Chandler Machine Co., Ayer, Mass.
Coronation—See Birch Brothers, Inc.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Dinsmore Mfg. Co., 288 Derby St., cor. Liberty St., Salem, Mass.
Excel—See Birch Brothers, Inc.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
Industrie-Werke Karlsruhe, Karlsruhe, Germany
MERROW MACHINE CO., THE, 2803 Laurel St., Hartford 6, Conn. ADV. PG. 147.
Metropolitan—See Willcox & Gibbs Sewing Machine Co.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Singer Sewing Machine Co., 149 Broadway, New York 6, N. Y.
Trumeter Co., 1265 Broadway, New York 1, N. Y.
Union Special Machine Co., 400 North Franklin St., Chicago 10, Ill.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Willcox & Gibbs Sewing Machine Co., 214 West 39th St., New York 18, N. Y.

SHADES—*Ventilating*

Hough Shade Corp., 1088 Jackson St., Janesville, Wisc.

SHEARS—*Carpet* (See Shears—Rotary)

SHEARS—*Mill* (See Scissors & Shears—Mill)

SHEARS—*Pinking* (See also Pinking Machines)

Automatic Steel Products, Mercury Clutch Dept., Metroloy Corp. Div., Canton 6, Ohio
Metroloy—See Automatic Steel Products
Wiss & Sons, J., 45 Littleton Avenue, Newark 7, N. J.

SHEARS—*Rotary*

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
HERMAS MACHINE CO., Hawthorne, N. J. ADV. PG. 165.
Loring Coes Co., 74 Coes St., Worcester 3, Mass.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England, Repr. by: Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Simonds-Worden-White Co., Summit St. at Negley Pl., Dayton 7, Ohio

SHEAVES—*Belt* (See Drives—V-Belt)

SHEAVES—*Dobby*

Arguto Oilless Bearing Co., 149 West Berkley St., Philadelphia, Pa.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
National Plastics, Inc., P. O. Box 152, Knoxville 1, Tenn.
Run-Rite—See National Plastics, Inc.
Trinacria Specialty Mfg. Co., Norwich, Conn.

SHEETS—*Steel or Stainless Steel* (See Steel)

SHELLS (See Rolls)

SHELVES—*Steel, Bins & Racks*

Ainsworth Manufacturing Corp., Multi-A-Frame Div., 1471 East Atwater St., Detroit 7, Mich.
Braun Gear Corp., 239 Richmond St., Brooklyn, N. Y.
Cleveland Wire Spring Co., 1281 East 38th St., Cleveland 14, Ohio
Lyon Metal Products Inc., 935 Madison Ave., Aurora, Ill.
Sunray Company, Camp Croff, Spartansburg, S. C.

SHIELDS—*Bobbin & Drivers*

TEXTILE SHIELD CO., INC., 1 Groton St., Lawrence, Mass. ADV. PG. 250.

SHOES—*Wood Sole*

Davenport—See Stahmer Shoe Co.
Perfect Rocker—See Reece Wooden Sole Shoe Co.
Reece Wooden Sole Shoe Co., Columbus, Neb.
Stahmer Shoe Co., Box 204, Davenport, Iowa

SHREDDERS (See Pickers—Rag & Shoddy)

SHRINKING MACHINES (See also "Sanforized" Machines)

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Hall Sons, Amos H., Clarkson Ave.—East of Front, Philadelphia 20, Pa.
Hunter Mach. Co., James, North Adams, Mass.
KLAUDER WELDON & GILES CO., Adams Ave. & Leiper St. ADV. PG. 140.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
Redmanized—See Proctor & Schwartz, Inc.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.

SHUTTLE FUR (See Fur—Shuttle)

SHUTTLE-TRUING MACHINES

Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Textile Specialty Co., Box 1297, Greensboro, N. C.

SHUTTLES

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa.
Lignostone—See Techno Exports
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
PAVIA SHUTTLE CO., THE, 415-419 Auburn St., Allentown, Pa. ADV. PG. 200.
Penn Reed & Harness Co., 119 South Aubroy St., Allentown, Pa.
Southern—See Steel Heddle Mfg. Co.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.
Watson-Williams Mfg. Co., Millburg, Mass.

SILK SIZINGS (See Sizing Agents)

SILK SOAKING AGENTS (See Soaking Agents)

SINGEING MACHINE—*Piece-Goods*

American Gas Furnace Co., Spring & Lafayette Sts., Elizabeth, N. J.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
Carbomatic Corp., 70 Bennington Ave., Freeport, N. Y.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
INDUSTRIAL HEAT ENGINEERING CO., 121 Cleveland St., Greenville, S. C. ADV. PG. 184.
Kemp Mfg. Co., C. M., 405 East Oliver St., Baltimore, Md.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.
RED-RAY MFG. CO. INC., 455 West 45th St., New York 19, N. Y. ADV. PG. 238.
Sill Industries, 185 Maplewood Ave., Maplewood, N. J.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

SINGEING MACHINE—*Thread*

Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.

SINGEING MACHINE—*Warp*

American Gas Furnace Co., Spring & Lafayette Sts., Elizabeth, N. J.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
Lanly Co., 750 Prospect Ave., Cleveland, Ohio
Process Heating, Inc., 48 Herkimer Place, Brooklyn 16, N. Y.

SINKERS & DIVIDERS

Hofmann & Co., Alfred, 635 59th St., West New York, N. J.
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I. ADV. PG. 144.
Ives Co., Loyal T, 19 Water St., New Brunswick, N. J.
Royersford Needle Works, Inc., 730 Walnut St., Royersford, Pa.
TEXTILE MACHINE WORKS, Reading, Pa. ADV. PG. 136-137.

SINKS

Metal Products Corp., 52 West 19th St., Weehawken, N. J.

SIZERS—*Warp* (See Slashers)

SIZERS—*Yarn* (See Yarn Sizing Machines)

SIZING AGENTS (See also under individual headings: Dextrin, Softeners, Starches, etc.)

American Aniline & Extract Co., Venango & F Sts., Philadelphia 34, Pa.
AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arabol Mfg. Co., 110 East 42 St., New York 17, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bick Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Chemical Processing Company, P. O. Box 5186, Charlotte 5, N. C.
Chemwax—See Chemical Processing Co.
Colton Chemical Co., 1545 East 18th St., Cleveland, Ohio
Cooper Corps., Peter, United States Gelatine Div., Gowanda, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Dow Chemical Co., Midland, Mich.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fiberloy—See Chemical Processing Co.
Flintkote Co., The, Ind. Prods. Div., 3 West 46th St., New York 20, N. Y.
GOODRICH CHEMICAL CO., B. F., 324 Rose Bldg., E 9th & Prospect, Cleveland 15, Ohio. ADV. PG. 278.
Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del.
Houghton & Co., E. F., 303 West Lehigh Ave., Philadelphia, Pa.
Hufilm—See National Starch Products Inc.
Ingranol—See Scholler Bros., Inc.
Kali Mfg. Co., 427 Meyer St., Philadelphia 25, Pa.
Kelco Co., 31 Nassau St., New York 5, N. Y.
Kem Products Co. (Inc.), 229 High St., Newark, N. J.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
LINDER & CO., 296 North Beacon St., Boston 35, Mass. ADV. PG. 286.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PHILADELPHIA QUARTZ CO., Public Ledger Bdlg., Philadelphia 6, Pa. ADV. PG. 284.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankfort Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N. Y.
SIDDALL CO., GEORGE F., Spartanburg, S. C. ADV. PG. 286.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Southern Sizing Co., P. O. Box 391, East Point, Ga.
STALEY MFG. CO., A. E., Lock Box 151A, Decatur, Ill. ADV. PG. 271.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Stodghill & Co., 716 Ponce de Leon Pl., N. E., Atlanta, Ga.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

SKEIN HANKING MACHINES (See Reels—Skeining)

SKEWERS

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
Norris Bros. Mfg. Co., Birnie St., Greenville, S. C.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.
Trinacria Specialty Mfg. Co., Norwich, Conn.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.
Whitin Machine Works, Whitinsville, Mass.

SKIDS (See Pallets & Skids)

SKINS—*Calf, Sheep & Lamb*

Fell & Son Ltd., Geo., Boltan, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.

Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
SNOWISS FUR CO., B., Lock Haven, Pa. ADV. PG. 254.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.

SLASHERS (See also Yarn Sizing Machines)

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
Hibbert & Co. Ltd., Joseph, Darwin, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
Johnson Machine Works, Charles B., Paterson, N. J.
Kruckels K. G., J., Zell (Wienstral), Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Sucker, G.m.b.H., Gebruder; M. Gladbach/Rhineland, Germany
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Unistel Textile Machine Corp., 225 Westchester Ave., Port Chester, N. Y.
West Point Foundry & Machine Co., West Point, Ga.

SLASHER—*Air*

PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.

SLATS—*Picker*

BAGSHAW CO., W. H., Mill 5, Pine St., Nashua, N. H. ADV. PG. 160.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamco—See League Mfg. Co., G. F.
REED CO., ROBERT C., 370 Seventh Ave., New York 1, N. Y. ADV. PG. 222.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.
Whitin Machine Works, Whitinsville, Mass.

SLATS—*Reel & Conveyor*

BAGSHAW CO., W. H., Mill 5, Pine St., Nashua, N. H. ADV. PG. 160.
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Harwood & Son, Geo. S., 50 Lagrange St., Worcester 8, Mass.
Hunter Mach. Co., James, North Adams, Mass.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Mechanical Handling Systems, Inc., 4600 Nancy Ave., Detroit 12, Mich.
REED CO., ROBERT C., 370 Seventh Ave., New York 1, N. Y. ADV. PG. 222.
SARGENT'S SONS CORP., C. G., Graniteville, Mass. ADV. PG. 127.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.

SLITTERS—*Cloth*

American Knitting Machine Co., 118 Boerum St., Brooklyn, N. Y.
Firsching & Son., Inc., J. A., 421 Broad St., Utica, N. Y.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
SOBROOK MACHINE CO., 542 3rd Ave., Brooklyn, N. Y. ADV. PG. 202.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
WALDRON CORP., JOHN, P. O. Box 791, New Brunswick, N. J. ADV. PG. 246.

SLIVER LAPPERS (See Lappers—Sliver)

SLUB-CATCHERS

General Electric Co., Carboloy Dept., 11189 E. 8 Mile Rd., Detroit 32, Mich.
Collins Supply & Equipment Co., 1365 Monsey Ave., Scranton 2, Pa.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
Eclipse Machine Div., Bendix Aviation Corp., Elmira, N. Y.
PAGE-MADDEN CO., Second St., Mineola, N. Y. ADV. PG. 78, 79.
Shipman, Ralph, Front & Reagan Sts., Sunbury, Pa.
Universal Winding Co., P. O. Box 1605, Providence 1, R. I.
Uster Corp, 2516 Wilkinson Blvd., Charlotte, N. C.
Wayne Mfg. Co., Honesdale, Pa.

SLUBBING FRAMES

PLATT BROS. & CO., LTD., Oldham, England, Repr. by: Atkinson & Haserick Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
REITER & CO., GERMANY, Represented by American Reiter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Whitin Machine Works, Whitinsville, Mass.

SOAKING AGENTS (See also Soaps, Lubricants, etc.)

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Kem Products Co. (Inc.), 229 High St., Newark, N. J.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

SOAKING MACHINES—*Rayon & Silk* (See also Degumming Machines)

AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.

SOAPERS—*Cloth & Yarn*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

SOAPS—*Textile*

Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Artic Crystal—See Colgate-Palmolive-Peet Co.
Armour & Co., Industrial Soap Dept., 1355 W. 31st St., Chicago 9, Ill.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Beach Soap Co., Lawrence, Mass.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Blue Label—See Beach Soap Co.
Brosco—See Scholler Bros., Inc.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Likol—See Beach Soap Co.
Magnus Chemical Co., Inc., 180 South Avenue, Garwood, N. J.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
National Milling & Chemical Co., 4601 Nixon Ave., Philadelphia, Pa.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Red Label—See Beach Soap Co.
Reichhold Chemicals, Inc., 630 Fifth Ave., New York 20, N. Y.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Rome Soap Mfg. Co., Rome, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
White Label—See Beach Soap Co.

SODA ASH (See Sodium—Salts of—Carbonate)

SODAS—*Modified*

Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Champion Paper & Fibre Co., Chemical Sales Dept., Canton, N. C.
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa.
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ADV. PG. 274.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

SODIUM HYPOSULFITE (See Antichlors)

SODIUM PRUSSIATE (See Sodium—Salts of—Ferrocyanide)

SODIUM—*Salts of*

Acetate ... A
Alginate ... B
Aluminate ... C
Arsenate ... D
Bicarbonate ... E
Bichromate ... F
Bifluoride ... G
Bisulfate ... H
Borate ... I
Carbonate ... J
Chlorate ... K
Chloride ... L
Chlorite ... M
Ferrocyanide ... N
Fluoborate ... O
Fluoride ... P
Formaldehyde Sulfoxylate ... Q
Formate ... R
Hexametaphosphate ... S
Hyrosulfite ... T
Hydroxide ... U
Hypochlorite ... V
Metaphosphate ... W
Metasilicate ... X
Nitrate ... Y
Nitrite ... Z
Orthosilicate ... AA
Perborate ... BB
Peroxide ... CC
Phosphate, Dibasic ... DD
Phosphate, Monobasic ... EE
Phosphate, Tribasic ... FF
Pyrophosphate ... GG
Sesquicarbonate ... HH
Sesquisilicate ... II
Silicate ... JJ
Stannate ... KK
Sulfate (Glauber's Salt) ... LL
Sulfide ... MM
Tetraphosphate ... NN

Aluminum Co. of America, New Kensington, Pa. C, G, O, P
American Agricultural Chemical Co., 50 Church St., New York 7, N. Y. DD, FF
Barnes Chemical Works, Inc., 200 Carlisle Ave., Paterson, N. J. A, J, L, U, V, Z, FF, GG, JJ, LL, NN
Blockson Chemical Co., Joliet, Ill. S, W, DD, EE, FF
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa. S, W
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y. A
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy A, D, E
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I. A, C, E, F
Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa. C
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J. I, J
Columbia-Southern Chemical Corp., 632 Duquesne Way, Pittsburgh 22, Pa. E, J, V
Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio X
Croton Chemical Corp., 114 Liberty St., New York 6, N. Y. E, Z
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio E, F, J, U, X, HH, II, JJ
Dow Chemical Co., Midland, Mich. A, U, JJ
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del. Z, BB, CC
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. H, T, X, Z, JJ
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. Q, T
ADV. PG. 258, 259.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, C, D, E, F, H, I, J, K, L, N, Q, S, T, U, V, W, X, Z, BB, CC, DD, EE, FF, GG, HH, JJ, KK, LL, MM
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. A, E, F, H, J, K, N, T, Z, JJ, LL
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y. R
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y. U, MM
International Salt Co., Inc., Scranton Life Bldg., Scranton, Pa. L
Johnson & Bassett, Inc., 114 Foster St., Worcester, Mass. E
Kelco Co., 31 Nassau St., New York 5, N. Y. B
Kuehne Chemical Co., 878 Woodruff Lane, Elizabeth 4, N. J. V
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo. A, D, E, F, H, I, J, L, T, U, V, Z, BB, CC, DD, EE, FF, HH, JJ, LL, MM
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. E, J, M, U, V, Z
ADV. PG. 2.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo. H, U, V, DD, EE, FF, GG, LL,
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo. W, EE, FF, GG, NN
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C. A, E, F, H, J, K, L, U, V, X, W, Z, BB, DD, EE, FF, GG, HH, JJ, LL, MM, NN
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y. A, F, H, U,
ADV. PG. 267. X, DD, FF, GG, JJ, LL
Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N. Y. F
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa. K, U
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. X, AA, II, JJ
ADV. PG. 284.
Resinous Products & Chemical Co., 222 West Washington Sq., Phialdelphia 5, Pa. Q, T
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. Q, T
ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. Q, T
ADV. PG. 281.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. S, W,
ADV. PG. 272. NN
Sherwin-Williams Co., The, 101 Prospect Ave., N.W., Cleveland 1, Ohio O
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. J, Z, HH
ADV. PG. 274.
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. I, U
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Synthane Corp., Textile Div., Oaks, Pa. KK
Tesco Chemicals, Inc., P. O. Box 7128, Station C, Atlanta 5, Ga. V
Victor Chemical Works, 141 West Jackson Blvd., Chicago 4, Ill. J, DD, EE, FF, GG
Virginia Smelting Co., West Norfolk, Va. T
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. J, L, S, U, DD, EE, FF, GG, MM
ADV. PG. 287.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J. Q, T
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. E, J, U
ADV. PG. 262, 263.

SODIUM THIOSUIFATE (See Antichlors)

SOFTENERS (See also under Sulfonated Fatty Alcohols or Oils—Manufactured or Compounded, etc.)

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
American Aniline & Extract Co., Venango & F St., Philadelphia 34, Pa.
American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
American Water Softener Co., SE Cor. Lehigh Ave. & Fourth, Philadelphia 33, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Armour & Co., Chemical Div., 1355 West 31 St., Chicago 9, Ill.
Armour & Co., Industrial Soap Dept., 1355 W. 31st St., Chicago 9, Ill.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Burkart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn.
Campbell & Co., Inc., John 75 Hudson St., New York 13, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Caroline Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Chemical Processing Company, P. O. Box 5186, Charlotte 5, N. C.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Creamyvl—See Scholler Bros., Inc.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Gelgy Co., Inc., 89 Barclay St., New York, N. Y.
Graver Water Conditioning Co., 216 West 14 St., New York 11, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hartex—See Hart Products Corp.
Heyden Chemical Corp., 342 Madison Ave., New York 17, N. Y.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Kem Products Co., Inc., 229 High St., Newark, N. J.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
LINDER & CO., 296 North Beacon St., Boston 35, Mass.
ADV. PG. 286.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Permutit Co., 330 West 42 St., New York 36, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C.
ADV. PG. 286.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
Roberts Filter Mfg. Co., 636 Columbia Ave., Darby, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa.
ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J.
ADV. PG. 281.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
SIDDALL CO., GEORGE F., Spartanburg, S. C.
ADV. PG. 286.
Sonneborn Sons, Inc., L., 300 Fourth Ave., New York 10, N. Y.
Southern Sizing Co., P. O. Box 391, East Point, Ga.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Standard Soap Co. of Camden, 205 South Second St., Camden, N. J.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Tex. Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Ultra Chemical Works, Inc., 2 Wood St., Paterson 4, N. J.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

SOLENOIDS

National Acme Co., 170 East 131 St., Cleveland 8, Ohio
Trombetta Solenoid Corp., 329 North Milwaukee St., Milwaukee 2, Wis.

SOLUBLE STARCH (See Starches—Converted)

SOLVENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Belle Alkali Co., Belle, W. Va.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Dow Chemical Co., Midland, Mich.
du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept., Wilmington 98, Del.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemical Dept., Wilmington, Del.
ADV. PG. 258, 259.
Eastman Chemical Products, Inc., Kingssport, Tenn.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.

LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261.
Momar, Inc., 451 Whitehall St., S.W., Atlanta, Ga.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Penetone Co., The, Tenafly, N. J.
Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Sharples Chemicals, Inc., 123 Broad St., Philadelphia 9, Pa.
Shell Chemical Corp., 50 West 50 St., New York 20, N. Y.
Shell Oil Corp., 50 West 50 St., New York 20, N. Y.
Sinclair Refining Co., Lubricating Sales Dept., 600 Fifth Ave., New York 20, N. Y.
Standard Oil Co., 910 South Michigan Ave., Chicago 80, Ill.
WESTVACO CHEMICAL DIV., FOOD MACHINERY AND CHEMICAL CORP., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 287.
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N. J.
WYANDOTTE CHEMICAL CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

SPEEDERS (See Roving Frames)

SPINDLE ADAPTERS (See Adapters—Spindle)

SPINDLE BRAKES (See Brakes—Spindle)

SPINDLE-OILING MACHINES (See also Lubricators—Machine)

Jenkins Metal Shops, Inc., Gatsonia, N. C.

SPINDLES

Cotton . . . . . A
Rayon & Silk . . . . . B
Scavenger C
Wool . . . . . D
Worsted . . . . . E

Carniti & C., A., Officine Forderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy . . . . . B, E
DRAPER CORP., Hopedale, Mass. . . . . A, B, D, E
ADV. PG. 1.
Ex-Cell-O Corp., Detroit 32, Mich. . . . . A, B, D, E
Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C. . . . . A, B, C, D, E
GUBELIN INTERNATIONAL CORP., MACHINERY & SPINDLES DEPT., 35 West 53 St., New York 19, N. Y. . . . . A, B, D, E
ADV. PG. 218.
Hartford Mach. Screw Co., P. O. Box 1440, Hartford, Conn. . . . . A, B, D, E
Landolt—See Gubelin International Corp., Machinery & Spindles Dept.
Marquette Metal Products Co., 1145 Galewood Dr., Cleveland 10, Ohio . . . . . A, B, D, E
McKelvie Machine Co., 832-834 North Marletta St., Gastonia, N. C. . . . . A, B
Norlander-Young Machine Co., York Rd., Gastonia, N. C. . . . . A, B, D, E
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. . . . . A, B, D
ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. . . . . E
ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125. . . . . A, B, D, E
S. K. F. Industries, Inc., P. O. Box 6731, Philadelphia 32, Pa. . . . . A, B, D, E
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. . . . . A, E
SANT' ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. . . . . E
ADV. PG. 117.
Smith & Son, E. E., Gastonia, N. C.
SMM—See Gubelin International Corp., Machinery & Spindles Dept.
Societe Alsacienne de Constructions, Mecaniques, Mulhouse, France, Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. . . . . E
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C. . . . . A
SPINDLES, MOTORS & MACHINERY LTD., Switzerland. Repr. by: Gubelin International Corp., New York 19, N. Y. . . . . A, B, C, D
ADV. PG. 218.
Trinacria Specialty Mfg. Co., Norwich, Conn. . . . . A, B, C
Wayne Mfg. Co., Honesdale, Pa. . . . . B
Whitin Machine Works, Whitinsville, Mass. . . . . A, B, D, E

SPINNERETTES—*Synthetic-Fiber*

Bishop & Co., 12 Channing Ave., Malvern, Pa.
Corning Glass Works, Corning, N. Y.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.

SPINNING FRAMES—*Cotton or Synthetic*

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
ISOTTA FRASCHINI, Milan, Italy. Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242.
Kuljian Corp., 100 North Broad St., Philadelphia 21, Pa.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Super Draft—See Whitin Machine Works
Whitin Machine Works, Whitinsville, Mass.

SPINNING FRAMES—*Wool*

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
ISOTTA FRASCHINI, Milan, Italy. Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
ADV. PG. 242.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
Super-Draft—See Whitin Machine Works
Whitin Machine Works, Whitinsville, Mass.

SPINNING FRAMES—*Worsted*

Cap . . . . . A
Flyer . . . . . B
Ring C

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy C
ISOTTA FRASCHINI, Milan, Italy. Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. C
ADV. PG. 242.
Norlander-Young Machine Co., York Rd., Gastonia, N. C. B
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. . . C
ADV. PG. 125
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. C
SANT' ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. C
ADV. PG. 117.
Super-Draft—See Whitin Machine Works
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa. C
Whitin Machine Works, Whitinsville, Mass. . . . . A, B, C

SPINNING OILS (See Lubricants—Fiber & Yarn)

SPLITTERS—*Pile-Fabric*

Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.

SPLITTERS—*Tubular Knit-Goods*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.

SPLITTERS—*Warp* (See Doublers—Warp Doublers & Splitters)

SPONGING MACHINES (See Shrinking Machines)

SPOOLERS—*Cotton*

Barber-Coleman Co., Rockford, Ill.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
Whitin Machine Works, Whitinsville, Mass.

SPOOLERS—*Jack*

Whitin Machine Works, Whitinsville, Mass.

SPOOLERS—*Narrow-Fabric*

HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.

SPOOLERS—*Thread*

Ayrton & Co. Ltd., Wm., Manchester, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.

SPOOLERS—*Woolen & Worsted*

Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Fabric Machinery Co. Inc., 307 Center St., Bridgeport, Conn.

SPOOLS (See also Bobbins)

SPOOLS—*Carpet & Rug*

Akron Spool & Mfg. Co., Stow-Talmadge Rd., Cuyahoga Falls, Ohio
AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
Decorated Metal Mfg. Co. Inc., 40 Washington Ave., Milltown, N. J.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
PARKS & CO., M. H., 30 Brown St., Winchendon, Mass. ADV. PG. 212.
Shawmut Engineering Co., 195 Freeport St., Boston 22, Mass.

SPOOLS—*Jack*

DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
LESTERSHIRE SPOOL & MFG. CO., Maryland Ave. & Beech St., Wilmington 99, Del. ADV. PG. 191.
PARKS & CO., M. H., 30 Brown St., Winchendon, Mass. ADV. PG. 212.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
SPAULDING FIBRE CO., INC., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.

SPOOLS—*Lace*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.

SPOOLS—*Metal* (See also listings by use)

Akron Spool & Mfg. Co., Stow-Talmadge Rd., Cuyahoga Falls, Ohio
Decorated Metal Mfg. Co. Inc., 40 Washington Ave., Milltown, N. J.
Hubbard Spool Co., Second St. & County Rd., Garrett, Ind.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass. ADV. PG. 235.
LESTERSHIRE SPOOL & MFG. CO., Maryland Ave. & Beech St., Wilmington 99, Del. ADV. PG. 191.

SPOOLS—*Ribbon*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.

Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Decorated Metal Mfg. Co. Inc., 40 Washington Ave., Milltown, N. J.
Middlesex Paper Tube Co., 345 Chelmsford St., Lowell, Mass.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
North Waterford Spool Co., North Waterford, Me.
Trinacria Specialty Mfg. Co., Norwich, Conn.

SPOOLS—*Thread*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Finish Spool Makers Assoc., Helsingfors, Finland—Represented by Atkinson, Haserick & Co., all Congress St., Boston 6, Mass.
Hubbard Spool Co., Second St. & County Rd., Garrett, Ind.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass. ADV. PG. 235.
LESTERSHIRE SPOOL & MFG. CO., Maryland Ave. & Beech St., Wilmington 99, Del. ADV. PG. 191.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
North Waterford Spool Co., North Waterford, Me.
SONOCO PRODUCTS CO., Hartsville, S. C. ADV. PG. 175.

SPOOLS—*Wood* (See also listings by use)

Akron Spool & Mfg. Co., Stow-Talmadge Rd., Cuyahoga Falls, Ohio
ALLENTOWN BOBBIN WKS. INC., 417 North 14th St., Allentown, Pa. ADV. PG. 164.
AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Banton Bros., Inc., Newport, Me.
Heckman Co., J. F., 42 Weybosset St., Providence 3, R. I.
Hubbard Spool Co., Second St. & County Rd., Garrett, Ind.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass. ADV. PG. 186.
Mack—See Allentown Bobbin Wks. Inc.
New England Bobbin & Shuttle Co., 31 Crown St., Eashua, N. H.
North Waterford Spool Co., North Waterford, Me.
PARKS & CO., M. H., 30 Brown St., Winchendon, Mass. ADV. PG. 212.
Trinacria Specialty Mfg. Co., Norwich Conn.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.
Wayne Mfg. Co., Honesdale, Pa.

SPOTPROOFING AGENTS

American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
LINDER & CO., 296 North Beacon St., Boston 35, Mass. ADV. PG. 286.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.

SPOTPROOFING MACHINES

Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

SPOTTING AGENTS

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Belle Alkali Co., Belle, W. Va.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Dow Chemical Co., Midland, Mich.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Kall Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Momar, Inc., 451 Whitehall St., S.W., Atlanta, Ga.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
PABST SALES CO., INDUSTRIAL PRODUCT DIV., 221 North LaSalle St., Chicago, Ill. ADV. PG. 282
Pennsylvania Salt Mfg. Co., 354 Widener Bldg., Philadelphia 7, Pa.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

SPRAYING MACHINES (See Dewing Machines)

SPREADERS—*Cloth-Expanding*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
Carolina Rubber Hose Co., Salisbury, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Hunter Mach. Co., James, North Adams, Mass.
JENKINS SONS, INC., M. W., Cedar Grove, N. J. ADV. PG. 201.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

SPREADERS—*Gill or Roll*

Atlanta Textile Machinery Co., 598 Means St., N.W., Atlanta, Ga.
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

SPREADERS—*Loom*

BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1
Hunt Loom & Machine Works, Inc., 200 Academy St., Greenville, S. C.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.

SPRING-BEARD NEEDLES (See Needles—Spring-Beard)

SPRINGS—*Resort*

PAGE-MADDEN CO., Second St., Mineola, N. Y. ADV. PG. 78, 79.

SPRINKLER SYSTEMS

Automatic Sprinkler Corp. of America., Brittain St., Youngstown, Ohio
Grinnell Co. Inc., 260 West Exchange St., Providence R. I.

SPROCKETS—*Chain*

BAHAN TEXTILE MACHY. CO. Camp Rd., Greenville, S. C. ADV. PG. 94.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Cox Foundry & Machine Co., 395 Cox Ave., S.W., Atlanta, Ga.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Diamond Chain & Mfg. Co., 402 Kentucky Ave., Indianapolis 7, Ind.
Dodge Mfg. Corp., Mishawaka, Ind.
Fort Worth Steel & Machinery Co., P. O. Box 1038, Ft. Worth, Tex.
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Mechanical Handilng Systems Inc., 4600 Nancy Av., Detroit 12, Mich.
Morse Chain Co., 7601 Central Ave., Detroit 8, Mich.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 109.
Shofd-A-Grip—See Boston Gear Wk. Inc.
Smith & Son, E. E., Gastonia, N. C.
Taperlock—See Dodge Mfg. Corp.
TODD-LONG PICKER APRON CO., Gastonia, N. C. ADV. PG. 236.
Union Chain & Mfg. Co., Sandusky, Ohio
Whitin Machine Works, Whitinsville, Mass.

SQUEEZERS—*Cloth* (See also Quetsches)

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Monforts, A., M. Gladbach/Germany
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
PETRIE & McNAUGHT, LTD., Rochdale, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

STAINS—*Fugitive* (See Tints—Throwster)

STAMPINGS—*Metal*

TEXTILE SHIELD CO., INC., 1 Groton St., Lawrence, Mass. ADV. PG. 250.

STANNIC CHLORIDE (See Tin—Salts of—Chloride)

STAPLERS (See Wire-Stitching Machines)

STARCH MANGLES (See Mangles—Cloth)

STARCHES (See also Gums—British Dextrin etc.)

STARCHES—*Converted*

Anheuser-Busch, Inc., Corn Prod. Dept., 721 Pestalozzi, St. Louis, Mo.
Arabol Mfg. Co., 110 East 42 St., New York 17, N. Y.
CLINTON FOODS INC., Clinton, Iowa. ADV. PG. 288.
CORN PRODUCTS SALES CO., 17 Battery Pl., New York 4, N. Y. ADV. PG. 266.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
Hubinger Co., The, State Central Bank Bldg., Keokuk, Iowa
Keever Starch Co., 538 East Town St., Columbus, Ohio
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.

National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
STALEY MFG. CO., A. E., Lock Box 151 A, Decatur, Ill. ADV. PG. 271.
Stein, Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y.

STARCHES—*Natural*

Arrowroot ..... **A**
Corn ..... **B**
Potato ..... **C**
Rice ..... **D**
Wheat ..... **E**

Anheuser-Busch, Inc., Corn Prod. Dept., 721 Pestalozzi, St. Louis, Mo. B
Arabol Mfg. Co., 110 East 42 St., New York 17, N. Y. B, F
CLINTON FOODS INC., Clinton, Iowa B
ADV. PG. 288.
CORN PRODUCTS SALES CO., 17 Battery Pl., New York 4, N. Y. B
ADV. PG. 266.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, B, C
General Mills, Inc., 400 Second Ave., S., Minneapolis, Minn. F
Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C. B, C, E
Hubinger Co., The, State Central Bank Bldg., Keokuk, Iowa B
Keever Starch Co., 538 East Town St., Columbus, Ohio B, F
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y. A, C, D, E, F
National Starch Products, Inc., Starch Sales Dept., 270 Madison Ave., New York, N. Y. B, C, E
Penick & Ford, Ltd., Inc., 420 Lexington Ave., New York 17, N. Y. B
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. A, B, C, D, E, F
ADV. PG. 286.
STALEY MFG. CO., A. E., Decatur, Ill. B
ADV. PG. 271.
Stein Hall & Co. Inc., 285 Madison Ave., New York 17, N. Y. B, C, D, E, F
Union Sales Corp., Bulk Products Div., 301 Washington, Columbus, Ind. B

STARCHING MACHINES (See Dusting Machines—Coated Fabric)

STARTERS—*Motor* (See Controls—Automatic & Manual Motor)

STATIC ELIMINATORS—*Chemical* (See Anti-Static Agents)

STATIC NEUTRALIZERS & ELIMINATORS

CHAPMAN ELECTRIC NEUTRALIZER CO., 28-64 Fore St., Portland 6, Me. ADV. PG. 166.
Herbert Products Inc., 74-34 Jamaica Ave., Woodhaven, N. Y.
Hewson Co., John K., 106 Water St., New York, N. Y.
Ionotron—See United States Radium Corp.
Midget—See Simco Company
SIMCO COMPANY, Ninth & Master Sts., Philadelphia 22, Pa. ADV. PG. 246.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Sticht & Company, 27 Park Pl., New York, N. Y.
Taki—See Hewson Co., John K.
United States Radium Corp., 535 Pearl St., New York 7, N. Y.

STEAM BOILERS (See Boilers—Steam)

STEAM TURBINES (See Turbines—Steam)

STEAMING MACHINES—*Knitted Cloth*

Kastrinsky Machine Co., Inc., 651 Utica Ave., Brooklyn 3, N. Y.

STEAMING MACHINES—*Woven Cloth* (See Boxes—Steamer; or Dryers—Piece Goods; or Decating Machines; or Conditioners—Yarn)

STEARIC ACID (See Acids—Fatty)

STEARINE

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.

STEEL—*Stainless*

Bars, Angles, Shapes ..... **A**
Pipe (See Pipe—Corrosion-Resisting)
Plates ..... **B**
Sheets ..... **C**
Tubing ..... **D**

Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa. A, B, C, D
Armco Steel Corp., 4312 Curtis St., Middletown, Ohio B, C
Atlantic Steel Co., Box 1714, Atlanta, Ga. A, C
CARPENTER STEEL CO., THE, ALLOY TUBE DIV., Union, N. J. A, B, C, D
ADV. PG. 197.
Chemsteel Construction Co., Inc., 401 Walnut St., Pittsburgh 32, Pa. B
Crucible Steel Co. of Amer., Oliver Building, Pittsburgh, Pa. A, B, C, D
Dixisteel—See Atlantic Steel Co.
Eastern Stainless Steel Corp., Baltimore 3, Md. A, B, C, D
Enduro—See Republic Steel Corp.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio A, B, C, D
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill. A, B, C, D
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa. A, B, C, D
U. S. S.—See United States Steel Corp.

STEEL—(Including Alloys)

Bars, Angles, Beams, Shapes ..... **A**
Pipe (See Pipe—Wrought Iron & Steel)
Plates (Floor, etc.) ..... **B**
Sheets ..... **C**
Tool ..... **D**
Tubing ..... **E**
Wire ..... **F**
Wire Nails ..... **G**

Atlantic Steel Co., Box 1714, Atlanta, Ga. A, B, C, F, G
Crucible Steel Co. of Amer., Oliver Building, Pittsburgh, Pa. A, B, C, D, E, F
Ryerson & Son, Inc., Joseph T., P. O. Box 8000A, Chicago 80, Ill. A, B, C, D, E, F, G
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa. A, B, C, D, E, F, G
U. S. S. Multigrip—See United States Steel Corp.

STICKS—*Dye* (See Dyesticks)

STICKS—*Picker*

Batson Mfg. Co., Inc., P. O. Drawer 1055, Greenville, S. C.
Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Hardwood Mfg. Co., Inc., P. O. Box 929, Greenville, S. C.
HEIM CO., THE, 48 Sanford St., Fairfield, Conn. ADV. PG. 211.
Lignostone—See Techno Exports, Lignostone Dept.
Plywood—See Bullard Clark Co., The, Jacobs Northern Div., E. H.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Super—See Bullard Clark Co., The, Jacobs Northern Div., E. H.
TATEM MFG. CO., Eastford, Conn. ADV. PG. 220.
Techno Exports, Lignostone Dept., 15 Whitehall St., New York 4, N. Y.
Texwood—See Schmidt Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.

STIFFENING AGENTS

Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.

STIRRERS (See Mixers—Mechanical)

STIRRUPS & LEVERS (See Saddles)

STITCHERS—*Box* (See Wire-Stitching Machines)

STOKERS

AE Perfect—See American Engineering Co.
American Engineering Co., Aramingo Ave. & Cumberland St., Philadelphia 25, Pa.
Leffel & Co., James, The, 426 East St., Springfield, Ohio
Taylor—See American Engineering Co.

STONEWARE—*Acidproof*

Haveg Corp., Newark, Del.
Knight Co., Maurice A., 171 Kelly Ave., Akron 9, Ohio
U. S. Stoneware Co., The, Akron 9, Ohio

STOOLS & CHAIRS (See Furniture—Mill)

STOP MOTIONS—*Drop-Wire Electrical*

Allen Warper Co., 40-44 Church St., Lowell, Mass.
Carolina Loom Reed Co., P. O. Box 1536, Greensboro, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Crawford Mfg. Co., Inc., The, 10 Dennis St., New Brunswick, N. J.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass.
ADV. PG. 235.
Pioneer Heddle & Reed Co., 1378 Murphy Ave., S.W., Atlanta, Ga.
Servo-Tek Prod. Co., Inc., 1086 Goffle Rd., Hawthorne, N. J.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Stop-Motion Devices Corp., 1471 Fulton St., Brooklyn 16, N. Y.
Wesco—See Stop-Motion Devices Corp.

STOP MOTIONS—*Drop-Wire Mechanical*

Allen Warper Co., 40-44 Church St., Lowell, Mass.
Carolina Loom Reed Co., P. O. Box 1536, Greensboro, N. C.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
MOSSBERG PRESSED STEEL CORP., Attleboro, Mass.
ADV. PG. 235.
Pioneer Heddle & Reed Co., 1378 Murphy Ave., S.W., Atlanta, Ga.
Smith & Smith Inc., 982 Southbridge St., Worcester 3, Mass.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stededco—See Steel Heddle Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Whitin Machine Works, Whitinsville, Mass.

STOP MOTIONS—*Knitting Machine*

Crawford Mfg. Co. Inc., The, 10 Dennis St., New Brunswick, N. J.
Guardian—See Stop-Motion Devices Corp.
HEMPHILL COMPANY, 131 Clay St., Pawtucket, R. I.
ADV. PG. 144.
LAMB KNITTING MACHINE CO., Montgomery St., Chicopee Falls, Mass.
ADV. PG. 244.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Sentinel—See Stop-Motion Devices Corp.
Ston-Motion Devices Corp., 1471 Fulton St., Brooklyn 16, N. Y.
TOMPKINS BROS. CO., 629 Oneida St., Syracuse 4, N. Y.
ADV. PG. 218.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Wildman Mfg. Co., Norristown, Pa.

STRAIGHTENERS—*Filling* (See Filling-Straightening Devices)

STRAINERS—*Water*

BENOIT CO., O. A., 34 Salem St., Lawrence, Mass.
ADV. PG. 232.

STRANDING MACHINES (See Cordage Machines or Strapping Machine—Wire)

STRAPPING—*Box & Carton*

Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.
Behr-Manning Corp., Div., Norton Co., 754 Seifert St., Troy, N. Y.
Behr-Cat—See Behr-Manning Corp. Div., Norton Co.

Gerrard & Co., A. J., 1950 Hawthorne Ave., Melrose Park, Ill.
Sharon Steel Corp., Brainard Steel Div., 2300 Griswold St., Warren, Ohio.
Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill.
Stanley Works, The, 195 Lake St., New Britain, Conn.
Steelbinder—See Gerrard & Co., A. J.

STRAPPING—*Loom* (See Straps—Loom)

STRAPPING—*Mill* (See Strapping—Loom)

STRAPPING—*Steel* (See Strapping—Box & Carton)

STRAPPING—*Wire* (See Strapping—Box & Carton)

STRAPPING MACHINE—*Wire*

Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.

STRAPS—*For Bumper, Check, Dobby, Harness, Hold-Up, Jack, Picker and Spindle Bumper* (See Straps—Loom)

STRAPS—*Loom*

Atlanta Belting Co., 508 Whitehall St., SW., Atlanta 3, Ga.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Bancroft Belting Co., 145 High St., Boston 10, Mass.
Barnes Co., Henry K., 8 Irving St., Salem, Mass.
Bon Vie—See Southern Belting Co.
Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.
Burgess Leather Co., A. E., Grafton, Mass.
Charlotte Leather Belting Co., 309 East 12th St., Charlotte, N. C.
Checkmaster—See Schmidt Mfg. Co.
Checkmate—See Southern Belting Co.
Chicago Belting Co., 113 North Green St., Chicago, Ill.
Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
Dayton Rubber Co., The, 2342 Riverview Ave., Dayton 7, Ohio.
DODENHOFF & CO., INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
DRAPER CORP., Hopedale, Mass.
ADV. PG. 1.
Duratex—See Schmidt Mfg. Co.
Emmons Loom Harness Co., 7 May St., Lawrence, Mass.
Fabco—See Fabreeka Products Co.
Fabreeka Products Co., 222 Summer St., Boston, Mass.
Fisher Leather Belting Co., 325 North Third St., Philadelphia 6, Pa.
Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Halritan—See Graton & Knight Co.
Impact—See Schmidt Mfg. Co.
Johnson Belting Co., 34-44 Hubert St., New York 13, N. Y.
Liberty—See Johnson Belting Co.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34, Mass. ADV. PG. 199.
Loomster—See Southern Belting Co.
McLeod Leather & Belting Co., Greensboro, N. C.
Old Grizzly—See Chicago Belting Co.
Page Belting Co., Concord, N. H.
Rhoads & Sons, J. E., 35 North Sixth St., Philadelphia 6, Pa.
Schmidt Mfg. Co., 280 North St., Box 560, New Bedford, Mass.
Shrewsbury Grain—See Burgess Leather Co., A. E.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Songlife—See Johnson Belting Co.
Southern Belting Co., P. O. Box 4296, Atlanta 2, Ga.
Spintex—See Graton & Knight Co.
Ton-Tex Corp., 247 Pearl St., N. W., Grand Rapids 2, Mich.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Tru-Le-Co—See Truche Leather Co.
Truche Leather Co., Peabody, Mass.
Verybest—See E. H. Bullard Clark Co., The, Jacobs Northern Div.
Warren Belting Co., 33 Arctic St., Worcester 8, Mass.
Williams & Sons, I. B., Dover, N. H.

STRETCHERS—*Bristle*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.

STRETCHERS—*Cloth-Belt*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.

STRETCHERS—*Synthetic-Yarn*

STEELE CO., INC., W. M., 171 Fremont St., Worcester 3, Mass. ADV. PG. 228.

STRIPPERS—*Bobbin* (See Bobbin-Stripping Machines)

STRIPPERS—*Card*

Abington Textile Machy. Wks., 19 Congress St., Boston 9, Mass.
ASHWORTH BROS. INC., Fall River, Mass.
ADV. PG. 161.
Atkinson Haserick & Co., 211 Congress St., Boston 6, Mass.
New England Machine Works, 574 East Main St., Waterbury, Conn.
Parks-Cramer Co., Fitchburg, Mass.
Roy & Son Co., B. S., 775 Southbridge St., Worcester 3, Mass.
Whitin Machine Works, Whitinsville, Mass.
Wright Hargreaves Engineering Co. Ltd., Blackburn, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

STRIPPING AGENTS (See also under individual headings; Sodium Salts of, etc.)

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Guardian Chem. Corp., 10-15 43 Ave., Long Island City, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Resinous Products & Chemical Co., 222 West Washington Sq., Philadelphia 5, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa.
ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill., N. J.
ADV. PG. 281.
Sun Chemical Corp., Warwick Chemical Co. Div., 10-10 44 Ave., Long Island City 1, N. Y.
Titan Chemical Products, Inc., Mill Rd & Wayne St., Jersey City 6, N. J.
Watson-Park Co., Ballardvale, Mass.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

STROBOSCOPES

BOULIN INSTRUMENT CORP., 65 Madison Ave., New York 16, N. Y. ADV. PG. 174.
G E—See Apparatus Sls Div., Bldg. 23, General Elec. Co.
General Electric Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass. ADV. PG. 245.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Strobolux—See General Radio Co.

SUEDING MACHINES

Hofmann Needle Works, Inc., Alfred, 3710 Hudson Blvd., Union City, N. J.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt.
ADV. PG. 192.
PLASTIC INDUSTRIES, INC., Athens, Tenn.
ADV. PG. 168.

SUGAR OF LEAD (See Lead-Salts of-Acetate)

SULFONATED FATTY ALCOHOLS (See Fatty Alcohol Sulfates or Emulsifying Agents & Assistants)

SULFONATED OILS (See Oils—Fiber Process)

SULFUR

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
GENERAL CHEMICAL DIV., ALLIED CHEM. & DYE CORP., 40 Rector St., New York 6, N. Y.
ADV. PG. 267.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.

SULFUR COLORS

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y.
ADV. PG. 283.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del.
ADV. PG. 258, 259.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.

SULFUR DIOXIDE (See Antichlors)

SULFUR DYES (See Dyes)

SULFURIC ACID (See Acids)

SULFUROUS ACID (See Antichlors or Acids)

SWEEPSTICKS (See Sticks-Picker)

SWIFTS (See Bobbins-Bottle or Reels-Skeining)

SWITCHES—*Automatic Transfer* (See Circuit Breakers)

SWITCHES—*Drum* (See Controls—Automatic & Manual Motor)

SWITCHES—*Electric*

A-H—See Arrow Hart & Hegeman Elec. Co.
ALLEN-BRADLEY CO., 120 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Arrow Hart & Hegeman Elec. Co., 103 Hawthorne St., Hartford 6, Conn.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Bull Dog Electric Prod. Co., 7610 Jos. Campau St., Detroit 32, Mich.
B/W Controller Corp., 2200 East Maple Rd., Birmingham, Mich.
Cash Co., A. W., 540 North 18 St., Decatur, Ill.
Clark Controller Co., 1146 East 152nd St., Cleveland 10, Ohio.
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis.
Electric Controller & Mfg. Co., 2701 East 79th St., Cleveland 4, Ohio.
Electro Devices Inc., Servo-Speed Div., 4 Godwin Ave., Patterson 1, N. J.
Federal Electric Products Co., 50 Paris St., Newark 5, N. J.
Fulscope—See Taylor Instrument Companies
General Elec. Co., Apparatus Sls. Div.—Bldg. 23, Schenectady, N. Y.
GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass. ADV. PG. 245.
Ideal Electric & Mfg. Co., Mansfield, Ohio.
Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa.
National Acme Co., 170 East 131 St., Cleveland 8, Ohio
Penn Controls Inc., Goshen, Ind.
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Square D Company, 6060 Rivard St., Detroit 11, Mich.
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.
Trumbull Electric Dept., General Electric Co., 41 Woodford Ave., Plainville, Conn.
Vacu-Break—See Bull Dog Electric Prod. Co.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

SWITCHES—*Snap-Action* (Explosion & Splash-Proof)

Minneapolis-Honeywell Regulator Co., Micro Div., Freeport, Ill.

SWITCHES—*Snap-Action* (Limit, Toggle, etc.)

Minneapolis-Honeywell Regulator Co., Micro-A Div., Freeport, Ill.

SWITCHES—*Transfer* (See Circuit Breakers)

TABLES—*Burling*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
McBRIDE, INC., EDWARD J., Cottman & Wissinoming Sts., Philadelphia 35, Pa. ADV. PG. 84, 85.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
PLASTIC INDUSTRIES, INC., Athens, Tenn. ADV. PG. 168.
Southern States Equipment Co., Hampton, Ga.
Stodghill & Co., 716 Ponce de Leon Pl., N. E., Atlanta, Ga.

TABLES—*Feed*

Crabb & Co., Wm., P. O. Box 95, Black Mountain, N. C.
Metal Products Corp., 52 West 19th St., Weehawken N. J.
Stodghill & Co., 716 Ponce de Leon Pl., N. E., Atlanta, Ga.
Whitin Machine Works, Whitinsville, Mass.

TABLES—*Inspection* (See Perches)

TABLES—*Mending-Carpet*

McBRIDE, INC., EDWARD J., Cottman & Wissinoming Sts., Philadelphia 35, Pa. ADV. PG. 84, 85.

TABLES—*Work* (See Benches—Stands, Work)

TACHOMETERS—*Centrifugal* (See Tachometers—Mechanical)

TACHOMETERS—*Chronometric* (See Tachometers—Mechanical)

TACHOMETERS—*Electric*

Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Esterline-Angus Co., P. O. Box 596, Indianapolis 6, Ind.
Foxboro Co., Inc., Foxboro, Mass.
G E—See Apparatus Sls. Div., Bldg. 23, General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass. ADV. PG. 245.
Leeds & Northrup Co., 444 North 16th St., Philadelphia, Pa.
Metron Instrument Co., 432 Lincoln St., Denver 9, Col.
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange Sts., Philadelphia 70, Pa.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Stewart-Warner Corp., 1226 Diversey Pkway, Chicago 14, Ill.
Strobotac—See General Radio Co.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

TACHOMETERS—*Hand* (See Tachometers—Mechanical)

TACHOMETERS—*Mechanical*

Associated Research, Inc., 3799 West Belmont Ave., Chicago 18, Ill.
BOULIN INSTRUMENT CORP., 65 Madison Ave., New York 16, N. Y. ADV. PG. 174.
Jones Motorola Corp., 102 Noble St., Stamford, Conn.
Lyons—See Boulin Instrument Corp.
Martindale Electric Co., 1389 Hird Ave., Cleveland 7, Ohio
O-Z—See Zernickow Company
Scherr Co., Inc., George, 200 Lafayette St., New York 12, N. Y.
Stewart-Warner Corp., 1226 Diversey Pkway, Chicago 14, Ill.
Visutac—See Boulin Instrument Corp.
Zernickow Company, 15 Park Row, New York, N. Y.

TACKING MACHINES

Bachman Uxbridge Worsted Corp., Uxbridge, Mass.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Burgess Fastening Co., 1220 West Ninth St., Cleveland 13, Ohio
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
MERROW MACHINE CO., THE, 2803 Laurel St., Hartford 6, Conn. ADV. PG. 147.

TALC

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Salomon & Bro., L. A., 216 Pearl St., New York 38, N. Y.

TALLOW

Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Sun Chemical Corp., Warwick Chemical Co. Div., 10-10 44 Ave., Long Island City 1, N. Y.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.

TANKS—*Aluminum* (See Tanks—Corrosion-Resisting)

TANKS—*Color-Mixing* (See Mixers—Mechanical)

TANKS—*Copper & Brass*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
CALDWELL CO., W. E., Brook & Brandels Sts., Louisville, Ky. ADV. PG. 251.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga. ADV. PG. 108.
Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Hamilton Copper & Brass Wks. Div., Brighton Copper Wks. Inc., 820 State Ave., Cincinnati 14, Ohio
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Langenkamp Co., F. H., 229 E. South St., Indianapolis, Ind.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Moulder Company, 89 East Ave., Rochester 4, N. Y.
TEXTILE MACHINERY INC., DIV. PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.

TANKS—*Corrosion-Resisting* (See also Tanks—Copper & Brass)

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
Alkor Se—See Atlas Mineral Prods. Co.
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Alsop Engineering Corp., 200 South St., Milldale, Conn.
Aluminum Co. of America, New Kensington, Pa.
American Hard Rubber Co., 93 Worth St., New York 13, N. Y.
AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
American Wringer Co., 212 Clinton St., Woonsocket, R. I.
Amoco Metal Inc., 1706 South 38th St., Milwaukee 46, Wis.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
Atlas Mineral Prods. Co., Mertztown, Pa.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Bouligny, Inc., R. H., 433 Morehead St., Charlotte, N. C.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
CALDWELL CO., W. E., Brook & Brandels Sts., Louisville, Ky. ADV. PG. 251.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, Mass. ADV. PG. 93.
Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.
Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga. ADV. PG. 108.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Corning Glass Works, Corning, N. Y.
Creamery Package Mfg. Co., The, 1243 West Washington Blvd., Chicago 7, Ill.

Davidson Engineering Co., Rural Hall Rd. & Polo Rd., Winston-Salem, N. C.
Dixie Leather Co., Albany, Ga.
Downingtown Iron Works Inc., Downingtown, Pa.
Duriron Company, Dayton 1, Ohio
Electro-Chemical Eng. & Mfg. Co., 750 Broad St., Emmaus, Pa.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Fleet Line—See Riggs & Lombard, Inc.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hall Sons, Amos H., Clarkson Ave.-East of Front, Philadelphia 20, Pa.
Hamilton Copper & Brass Wks. Div., Brighton Copper Wks. Inc., 820 State Ave., Cincinnati 14, Ohio
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo, 6, Mich.
Hauser-Stander Tank Co., 4820 Spring Grove Ave., Cincinnati 32, Ohio
Haveg Corp., Newark, Del.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
KLAUDER WELDON GILES MACHINE CO., Adams Ave. & Leiper St., Philadelphia 24, Pa. ADV. PG. 140.
Langenkamp Co., F. H., 229 E. South St., Indianapolis, Ind.
Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass.
Luzerne Rubber Co., Mulrhead & Dewey Sts., Trenton 7, N. J.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Market Forge Co., 35 Garvey St., Everett Station, Boston 49, Mass.
Metal-Glass Products Co., One Reed St., Belding, Mich.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Morton Machine Works, Columbus, Ga.
National Carbon Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Orange Roller Bearing Co., Metalsmiths Div., 557 Main St., Orange, N. J.
Pfaudler Company, 89 East Ave., Rochester 4, N. Y.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
San-I-Tanks—See Metal-Glass Products Co.
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich.
SMITH DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. ADV. PG. 132, 133.
Southland—See Chattanooga Boiler & Tank Co.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes-Barre, Pa. ADV. PG. 229.
Stover Steel Tank & Mfg. Co., 100 South Hancock Ave., Freeport, Ill.
TEXTILE MACHINERY, INC., DIV. PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
U. S. Stoneware Co., The, Akron 9, Ohio
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
Wakefield—See Lead Lined Pipe Co.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.
Windeler Co., George, 2201 Jerrold Ave., San Francisco 24, Calif.
Zerok 110—See Atlas Mineral Prods. Co.

TANKS—*Glass-Lined*

Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.
Corning Glass Works, Corning, N. Y.
Glascote Prods. Inc., 2900 St. Clair Ave., Cleveland 17, Ohio
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Pfaudler Company, 89 East Ave., Rochester 4, N. Y.
Southland—See Chattanooga Boiler & Tank Co.

TANKS—*Iron & Steel*

Acme Coppersmithing Co., 2535 Maypole Ave., Chicago 12, Ill.
ALLEN SONS CO., WM., 65 Green St., Worcester 1, Mass. ADV. PG. 244.
Alsop Engineering Corp., 200 South St., Milldale, Conn.
ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
Bethlehem Steel Co., Inc., Bethlehem, Pa.
Biggs Boiler Wks. Co., 1007 Bank St., Akron, Ohio
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
CALDWELL CO., W. E., Brook & Brandeis Sts., Louisville, Ky. ADV. PG. 251.
CARROLL & CO., J. E., 100 Cambridge St., Lowell, ADV. PG. 93.
Chattanooga Boiler & Tank Co., 1011 East Main St., Chattanooga 1, Tenn.
Chemsteel Construction Co., Inc., 401 Walnut St., Pittsburgh 32, Pa.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
COLE MFG. CO., R. D., 57 East Broad St., Newnan, Ga. ADV. PG. 108.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Downingtown Iron Works Inc., Downingtown, Pa.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Finnigan Co. Inc., J. J., 455 Means St., N. W., Atlanta, Ga.
Fleet Line—See Riggs & Lombard, Inc.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hapman-Dutton Co., 610 Gibson Ave., Kalamazoo 6, Mich.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Langenkamp Co., F. H., 229 E. South St., Indianapolis, Ind.
Malow Sheet Metal & Machine Works, 113-129 Fulton Pl., Paterson 1, N. J.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Morton Machine Works, Columbus, Ga.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Southland—See Chattanooga Boiler & Tank Co.
Stover Steel Tank & Mfg. Co., 100 South Hancock Ave., Freeport, Ill.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Union Iron Works, 15 & Cascade Sts., Erie, Pa.
Whitlock Mfg. Co., 97 South St., West Hartford, Conn.

TANKS—*Wood*

Arrow Tank Co., Inc., 16 Barnett St., Buffalo 15, N. Y.
Atlantic Tank Corp., 1207 Tonelle Ave., North Bergen, N. J.
CALDWELL CO., W. E., Brook & Brandeis Sts., Louisville, Ky. ADV. PG. 251.
HALL & SONS, AMOS H., 5500 North Water St., Philadelphia 20, Pa. ADV. PG. 252.
Hauser-Stander Tank Co., 4820 Spring Grove Ave., Cincinnati 32, Ohio
Woolford Wood Tank Mfg. Co., Second & Pine Sts., Darby 8, Pa.

TAPE—*Gummed-Paper, Rubber, Plastic, or Friction*

Edgewater Paper Co., 306 Garfield Ave., Menasha, Wis.
Gates Co., N. T., Textile Packagings Dept., Fifth & Chestnut St., 801 Drexel Bldg., Philadelphia, Pa.
Gumcraft—See Gummed Tape & Devices Co.
Gummed Tape & Devices Co., 1069-71 Rogers Ave., Brooklyn 26, N. Y.
Itstix—See Nashua Gummed & Coated Paper Co.
Jenkins Bros., 100 Park Ave., New York, N. Y.
McLaurin Jones Co., 492 MacLaurin St., Brookfield, Mass.
Nashua Gummed & Coated Paper Co., 1935 Clark St., Nashua, N. H.
Package Sealing & Label Co., 141 East 25th St., New York, N. Y.
Redcove—See Rexford Paper Co.
Rexford Paper Co., 3100 West Mill Rd., Milwaukee 9, Wisc.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Safe-T-Seal—See Rexford Paper Co.
Stayon—See Edgewater Paper Co.

TAPE—*Pressure-Sensitive*

Behr-Cot—See Behr Manning Corp. Div. Norton Co.
Behr-Manning Corp. Div., Norton Co., 754 Siefert St., Troy, N. Y.
Minnesota Mining & Mfg. Co., 900 Fauqier Ave., St. Paul 6, Minn.
Scotch—See Minnesota Mining & Mfg. Co.

TAPE—*Spinning and Twisting*

Arbeka Webbing Co., Roosevelt Ave., Mendon & Bates St., Pawtucket, R. I.
Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston, Mass.
Bull Dog—See Boston Woven Hose & Rubber Co.
Hone Webbing Co., P. O. Box 1495, Providence 1, R. I.
Lambeth Rope Corp., 627 Tarklin Hill Rd., New Bedford, Mass.
SOUTHERN WEAVING CO, P. O. Box 2090, Greenville, S. C. ADV. PG. 244.
Southern Weaving, Greenville, S. C.
Whitin Machine Works, Whitinsville, Mass.

TAPE BLOCKING MACHINES

Ruf Machine Co., 420 East 93 St., New York 28, N. Y.

TAPE CONDENSERS

BARKER COMB & RUB. DIV., Souderton, Pa. ADV. PG. 204.
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Houben, Theodore, Verviers, Belgium. Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Whitin Machine Works, Whitinsville, Mass.

TAPES—*Condenser*

Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.
HAY LEATHER CO. INC., JAMES E., 244 Smith St., Lowell, Mass. ADV. PG. 208.
HOWARD BROS. MFG. CO., 44 Vine St., Worcester, Mass. ADV. PG. 95.
Redman Card Clothing Co., Red Spring Rd., Andover, Mass.

TAPIOCA FLOUR

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Morningstar Nicol, Inc., 630 West 51 St., New York 19, N. Y.
National Starch Pdts. Inc., 270 Madison Ave., New York, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.

TAR & PAINT REMOVERS

Momar, Inc., 451 Whitehall St., S. W., Atlanta, Ga.
Textile Aniline & Chemical Co., 49 Blanchard St., Lawrence, Mass.

TARTAR EMETIC

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y.

TARTARIC ACID (See Acids)

TEASELING MACHINES (See Gigs)

TELEPHONES (See Intercommunicators)

TELEVISION—*Industrial*

Diamond Power Specialty Corp., P. O. Box 415, Lancaster, Ohio
Utiliscope—See Diamond Power Specialty Corp.

TEMPLES—*Loom*

ARMSTRONG CORK CO., TEXTILE PRODS. DEPT., 8400 Arch St., Lancaster, Pa. ADV. PG. 185.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.

Greenville Belting Co., Bramlett Rd., Greenville, S. C.
Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
McCASKIE, INC., WM., Forge Road, Westport, Mass. ADV. PG. 208.
Roy Noble Co., New Bedford, Mass.
Tension-Rite Industries, 1123 Romany Rd., Charlotte, N. C.
Trinacria Specialty Mfg. Co., Norwich, Conn.

TENSIOMETERS

BOULIN INSTRUMENT CORP., 65 Madison Ave., New York 16, N. Y. ADV. PG. 174.

TENSIONS—*Knitting-Machine*

Link Engineering Co., 13845 Elmira, Detroit 27, Mich.
PAGE-MADDEN CO., INC., 76-96 Second St., Mineola, N. Y. ADV. PG. 78, 79.
Stop-Motion Devices Corp., 1471 Fulton St., Brooklyn 16, N. Y.

TENSIONS—*Open Width or Rope* (Fabric)

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
COOK P-N MACHINE CO., INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Link Engineering Co., 13845 Elmira, Detroit 27, Mich.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
MT. HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass. ADV. PG. 153.
Tension-Rite Industries, 1123 Romany Rd., Charlotte, N. C.

TENSIONS—*Warper and/or Warper Creel*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass. ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
AMERICAN LAVA CORP., Manufacturers Rd., Chattanooga 5, Tenn. ADV. PG. 91.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
KIDDE & CO., WALTER, 499 Main St., Belleville, N. J. ADV. PG. 149.
Link Engineering Co., 13845 Elmira, Detroit 27, Mich.
PAGE-MADDEN CO., Second St., Mineola, N. Y. ADV. PG. 78, 79.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.
Stehedco—See Steel Heddle Mfg. Co.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Wayne Mfg. Co., Honesdale, Pa.

TENSIONS—*Winding-Machine*

AMERICAN LAVA CORP., Manufacturers Rd., Chattanooga 5, Tenn. ADV. PG. 91.
Cameron Machine Co., 61 Poplar St., Brooklyn 2, N. Y.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
KIDDE & CO., WALTER, 499 Main St., Belleville, N. J. ADV. PG. 149.
Link Engineering Co., 13845 Elmira, Detroit 27, Mich.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis.
PAGE-MADDEN CO., Second St., Mineola, N. Y. ADV. PG. 78, 79.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Tension-Rite Industries, 1123 Romany Rd., Charlotte, N. C.
Trinacria Specialty Mfg. Co., Norwich, Conn.
Universal Winding Co., P. O. Box 1605,, Providence, R. I.
Wayne Mfg. Co., Honesdale, Pa.
Whitin Machine Works, Whitinsville, Mass.

TEASELING MACHINES (See Gigs)

TENTER FRAMES—*Cloth*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
FARMER NORTON & CO. LTD., SIR JAMES, Manchester, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
Gessner Co., David, 41 Fremont St., Worcester 3, Mass.
Hinnekens Machine Co. Inc., 201 Godwin Ave., Paterson 1, N. J.
Hunter Mach. Co., James, North Adams, Mass.
Kenyon & Sons, Inc., D. R., Raritan, N. J.
Krantz Sohne, H., Aachen, Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
McCreary Machine Works, Inc., Cohoes, N. Y.
Michigan Oven Co., Architects Bldg., 6th Fl., 423 Brainard St., Detroit, Mich.
Monforts, A., M. Gladbach/Germany
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Vapo-Jet—See Hunter Mach. Co., James
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

TENTER PLATES and/or TRACKS

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Southern Textile Works, P. O. Box 406, 202 South Towers St., Anderson, S. C.

TESTERS—*Abrasion*

ATLAS ELEC. DEVICES CO., 361 West Superior St., Chicago 11, Ill. ADV. PG. 168.
Custom Scientific Instruments, Inc., 541-543 Devon St., Arlington, N. J.
Fabbricihe Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
SCOTT TESTERS, INC., 101 Blackstone St., Providence 5, R. I. ADV. PG. 240.
Shawmut Engrg. Co., 195 Freeport St., Boston 22, Mass.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Taber Instrument Corporation, North Tonawanda, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.
Wyco—See Wyzenbeek & Staff, Inc.
Wyzenbeek & Staff, Inc., 223 North California Ave., Chicago 12, Ill.

TESTERS—*Ball Bursting*

SCOTT TESTERS, INC., 101 Blackstone St., Providence 5, R. I. ADV. PG. 240.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Bobbin*

Whitin Machine Works, Whitinsville, Mass.

TESTERS—*Chlorine Retention*

ATLAS ELEC. DEVICES CO., 361 West Superior St. Chicago 11, Ill. ADV. PG. 168.
Launder-Ometer—See Atlas Elec. Devices Co.

TESTERS—*Cohesion*

Fabbricihe Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Geier & Bluhm, Inc., 670 River St., Troy, N. Y.
TENSION-RITE INDUSTRIES, 1123 Romany Rd., Charlotte, N. C. ADV. PG. 158.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Color Fastness*

ATLAS ELEC. DEVICES CO., 361 West Superior St., Chicago 11, Ill. ADV. PG. 168.
Fade-Ometer—See Atlas Elec. Devices Co.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Color Matching* (See Color Comparators)

TESTERS—*Compressibility*

Instron Engineering Corp., 2 Hancock St., Quincy 71, Mass.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Cotton Lap*

Hetherington & Sons, Inc., John, Gastonia, N. C.
Special Instruments Lab. Inc., 1003 Highland Ave., Knoxville, Tenn.

TESTERS—*Crepeage*

UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Diaphragm Bursting*

Muller Tester—See Perkins & Son, Inc., B. F.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Electrolytic Alkali Solution*

Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Industrial Instrument Co., 89 Commerce Rd., Cedar Grove, N. J.

TESTERS—*Fiber Fineness*

Aerolometer—See Special Instruments Lab., Inc.
Micronaire—See Sheffield Corp., The
Sheffield Corp., The, 721 Springfield St., Dayton 1, Ohio
Special Instruments Lab. Inc., 1003 Highland Ave., Knoxville, Tenn.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Fiber Length*

Fibrograph—See Special Instruments Lab., Inc.
Special Instruments Lab., Inc., 1003 Highland Ave., Knoxville, Tenn.

TESTERS—*Flammability*

Custom Scientific Instruments Inc., 541-543 Devon St., Arlington, N. J.

TESTERS—*Human Eye*

Keystone View Co., Meadville, Pa.
Telebinocular—See Keystone View Co.

TESTERS—*Hydrogen-Ion* (See Instruments—pH Indicator)

TESTERS—*Moisture* (See Also Instruments—Moisture-Content Gauges)

Brabender Corp., Rochelle Park, N. J.
DIETERT CO., HARRY W., 9330 Roselawn Ave., Detroit 4, Mich. ADV. PG. 206.
HART-MOISTURE METERS, Grand Central Terminal, Rm 1948; New York 17, N. Y. ADV. PG. 210.

Moisture Register Co., 1510 W. Chestnut St., Alhambra, Calif.
Proctor & Schwartz, Inc., Seventh St. & Tabor Rd., Philadelphia 20, Pa.
Wilkens-Anderson Co., 4525 W. Division St., Chicago 51, Ill.

TESTERS—*Permeability*

DIETERT CO., HARRY W., 9330 Roselawn Ave., Detroit 4, Mich. ADV. PG. 206.
Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Gurley, W. & L. E., 514 Fulton St., Troy, N. Y.
Sheffield Corp., The, 721 Springfield St., Dayton 1, Ohio
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*pH* (See Instruments—pH Indicator)

TESTERS—*Pliability*

Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Taber Instrument Corporation, North Tonawanda, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Roving*

Brush Electronics Co., 3409 Perkins Ave., Cleveland 14, Ohio
Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Hetherington & Sons, Inc., John, Gastonia, N. C.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Uniformity Analyzer—Brush Electronics Co.
Whitin Machine Works, Whitinsville, Mass.

TESTERS—*Sliver*

Brush Electronics Co., 3409 Perkins Ave., Cleveland 14, Ohio
Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Hetherington & Sons, Inc., John, Gastonia, N. C.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Uniformity Analyzer—See Brush Electronics Co.

TESTERS—*Spindle*

Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.

TESTERS—*Stiffness*

Gurley, W. & L. E., 514 Fulton St., Troy, N. Y.
Taber Instrument Corporation, North Tonawanda, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Tearing*

Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.

TESTERS—*Tensile Strength & Elongation*

Chatillon & Sons, John, 89 Cliff St., New York 38, N. Y.
Dobrich, Joseph, Tucson, Ariz.
Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Instron Engineering Corp., 2 Hancock St., Quincy 71, Mass.
SCOTT TESTERS, INC., 101 Blackstone St., Providence 5, R. I. ADV. PG. 240.
Special Instruments Lab. Inc., 1003 Highland Ave., Knoxville, Tenn.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Tension*

BOULIN INSTRUMENT CORP., 65 Madison Ave., New York 16, N. Y. ADV. PG. 174.
Brush Electronics Co., 3409 Perkins Ave., Cleveland 14, Ohio
Chatillon & Sons, John, 89 Cliff St., New York 38, N. Y.
Emerson Apparatus Co., 177 Tremont St., Melrose, Mass.
Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
SCOTT TESTERS, INC., 101 Blackstone St., Providence 5, R. I. ADV. PG. 240.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Tension Analyzer—See Brush Electronics Co.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Thickness*

Custom Scientific Instruments Inc., 541-543 Devon St., Arlington, N. J.

TESTERS—*Twist*

Fabbriche Elettrotecniche Riunite, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
SCOTT TESTERS, INC., 101 Blackstone St., Providence R. I. ADV. PG. 240.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TESTERS—*Water Hardness*

Cherry-Burell Corp., 427 West Randolph St., Chicago 6, Ill.
Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Permutit Co., 330 West 42 St., New York 36, N. Y.
Wilkens-Anderson Co., 4525 W. Division St., Chicago 51, Ill.

TESTERS—*Weathering*

ATLAS ELEC. DEVICES CO., 361 West Superior St., Chicago 11, Ill. ADV. PG. 168.
Weather-Ometer—See Atlas Elec. Devices Co.

TESTERS—*Wrinkle*

Custom Scientific Instruments Inc., 541-543 Devon St., Arlington, N. J.

TESTERS—*Yarn Evenness* (See also Detectors—Uniformity)

Brush Electronics Co., 3409 Perkins Ave., Cleveland 14, Ohio.
Hetherington & Sons, Inc., John, Gastonia, N. C.
Robertshaw-Fulton Controls Co., 2920 North Fourth St., Philadelphia 33, Pa.
Suter Co., Alfred, 200 Fifth Ave., New York, N. Y.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.

TESTING LABORATORIES (See Commission Services)

TETRACHLOROETHYLENE (See Solvents)

TETRAHYDROFURFURYL ALCOHOL (See Solvents)

TETRALIN (See Solvents)

TETRAPHOSPHATE (See Sodium—Salts of—Tetraphosphate)

THERMOMETERS—*Indicating Industrial*

Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio
Barber-Colman Co., Rockford, Ill.
Bauer Thermometer Co., 332 West 21 St., New York 11, N. Y.
Bestest—See Freas Glass Works
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Double Diamond—See H. B. Instrument Co.
Electric Auto Lite Co., Instrument & Gauge Div., Toledo 1, Ohio
Foxboro Company, Foxboro, Mass.
Freas Glass Works, 146 Eats Ninth Ave., Conshohocken, Pa.
G. S.—See General Scientific Equip. Co.
General Scientific Equip. Co., 2760 West Huntingdon St., Philadelphia, Pa.
H. B. Instrument Co., American & Bristol Sts., Philadelphia, Pa.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ADV. PG. 249.
Marsh Corp., James P., Skokie, Ill.
Moeller Instrument Co., 132-02 89th Ave., Richmond Hill 8, N. Y.
Morton Machine Works, Columbus, Ga.
Nurnberg Thermometer Co., 124 Livingston St., Brooklyn 2, N. Y.
Partlow Corp., 2 Campion Rd., New Hartford, N. Y.
Powers Regulator Co., 3400 Oakton St., Skokie, Ill.
Precision Thermometer & Instr. Co., 1434 Brandywine St., Philadelphia, Pa.
Pyrotron—See Bailey Meter Co.
Scientific Instrument Co., 1041 Second Ave., Detroit 26, Mich.
Thermoguide—See Taylor Instrument Companies
Weksler Thermometer Co., Martinique Bldg., 49 West 32 St., New York 1, N. Y.
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J.

THERMOMETERS—*Recording* (See Instruments—Temperature, Indicating & Recording)

THERMOMETERS—*Wet-Bulb* (See Instruments—Wet-Bulb Hygrometer)

THICKENERS (See Gums or Printing Thickeners)

THINNERS & THINNING AGENTS

Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
MONSANTO CHEMICAL CO., MERRIMAC DIV., Boston 49, Mass. ADV. PG. 260, 261.
National Starch Products Inc., 270 Madison Ave., New York 16, N. Y.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.

THREAD COMPRESSORS

HEANY INDUSTRIAL CERAMICS CORP., 915 Whitney Ave., New Haven, Conn. ADV. PG. 138, 139.

THREAD MANUFACTURERS

GASTONIA COMBED YARN CORP., Gastonia, N. C. ADV. PG. 300.

THREAD-POLISHING MACHINES

Ayrton & Co. Ltd., Wm., Manchester, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.

THREAD-PULLING MACHINES

COOK P-N MACHINE CO. INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.

THREAD WAXING ATTACHMENT

Gaston County Dyeing Mach. Co., Stanley, N. Y.

THREAD WAXING MACHINES (See Thread-Polishing Machines)

THREADERS—*Pipe* (See Pipe Threading Equipment)

THROWING MACHINES (See also Twisters—Yarn or Up-Twisters)

Fletcher Works Inc., Glenwood Ave. & Second St., Philadelphia, Pa.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

THROWING OILS (See Lubricants—Fiber & Yarn)

THROWSTERS (See Commission Services)

THROWSTERS TINTS (See Tints—Throwsters)

TIERS—*Bundle* (See Tying Machines—Bundle)

TIES—*Bale* (See Strapping—Box & Carton)

TIGERS

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

TIMERS

ALLEN-BRADLEY CO., 120 West Greenfield Ave., Milwaukee 4, Wis. ADV. PG. 3rd Cover.

TIN CRYSTALS (See Tin—Salts of—Chloride)

TIN SALTS (See Tin—Salts of—Chloride)

TIN—Salts of

Acetate ..... A
Chloride ..... B
Tetrachloride C

du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del. ..... B
Eimer & Amend, 635 Greenwich St., New York 14, N. Y. A, B, C
Jordan Company, 51st & Merrimac Ave., Chicago, Ill. B
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo. ..... B

TINTING MACHINES

TEXTILE EQUIPMENT CORP., 619 Rutherford St., Greenville, S. C. ADV. PG. 169.
Unitint—See Textile Equipment Corp.

TINTS—*Throwster*

ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Chemical Processing Company, P. O. Box 5186, Charlotte 5, N. C.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Textile Aniline & Chemical Co., 49 Blanchard St., Lawrence, Mass.
UNITED STATES TESTING CO., INC., 1750 Park Ave., Hoboken, N. J. ADV. PG. 294.

TIPPING MACHINES

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Werner Machine Co., 183 Autumn St., Passaic, N. J.

TITANIUM

Barium Pigments ..... A
Chloride Pigments ..... B
Dioxide C
Oxide ..... D
Sulfate ..... E
Tetrachloride ..... F
Metal ..... G

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y. C
du Pont de Nemours & Co., Inc., E. I., Pigments Dept., Wilmington 98, Del. ..... C, D
Filo Color & Chemical Corp., 202 East 44 St., New York 17, N. Y. ..... A, B, C, E, F
Eimer & Amend, 635 Greenwich St., New York, 14, N. Y. ..... B, C, D, E, F, G
Glidden Co., The, 11001 Madison Ave., Cleveland 2, Ohio C
National Lead Co., 111 Broadway, New York 6, N. Y. C, D, E, F
Stauffer Chemical Co., 420 Lexington Ave., New York 17, N. Y. ..... G

TOLUENE (See Solvents)

TOLUOL

American Cyanamid Co., Calco Chemical Div., 30 Rockefeller Plaza, New York 20, N. Y.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.
Dow Chemical Co., Midland, Mich.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Filo Color & Chemical Corp., 202 East 44 St., N. Y. 17, N. Y.
Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
Pittsburgh Coke & Chemical Co., 1905 Grant Bldg., Pittsburgh, Pa.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio
Shell Chemical Corp., 50 W. 50th St., New York 20, N. Y.
Shell Oil Corp., 50 West 50th St., New York 20, N. Y.

TOMMY DODDS (See Mangles—Cloth)

TOOL STEEL (See Steel)

TOOLS—*Burling* (See Irons—Burling)

TOOLS—*Loom & Frame Fixers, Maintenance, Mechanics*

ALLEN MFG. CO., Drawer 570, Hartford 2, Conn. ADV. PG. 209.
Beaver Pipe Tools Co., Warren, Ohio
Black & Decker Mfg. Co., The, 600 East Pennsylvania Ave., Towson, Md.
Blue-Point—See Snap-On Tools Corp.
Dixie Spindle & Flyer Co., 1906 N. Brevard St., Charlotte 2, N. C.
Genuine Stillson—See Walworth Co.
Guillet Precision Alignment—See Dixie Spindle & Flyer Co.
Parmelee—See Walworth Co.
Snap-On Tools Corp., 8100 28 St., Kenosha, Wis.
Stanley Works, The, 195 Lake St., New Britain, Conn.
Toledo Pipe Threading Machine Co., 1445 Summit St., Toledo, Ohio.
Utility—See Black & Decker Mfg. Co.
Walworth Co., 60 East 42 St., New York 17, N. Y.

TOOLS—*Strapping* (See Strapping—Box & Cartons)

TORCHES—*Cutting & Welding, Soldering*

Air Reduction, 60 East 42 St., New York 17, N. Y.
EISLER ENGINEERING CO., INC., 750 South 13th St., Newark 3, N. J. ADV. PG. 238.
Bullard Clark Co., The, Jacobs Northern Div., E. H., Danielson, Conn.
G. S.—See General Scientific Equip Co.
General Scientific Equip Co., 2760 West Huntington St., Philadelphia, Pa.
Lincoln Electric Co., The, 22801 St. Clair, Cleveland, Ohio
Radio Shack Corp., 167 Washington St., Boston 8, Mass.
Tolman Mfg. Co., 19 W. Third St., So. Boston 27, Mass.

TOTE BOXES (See Boxes—Tote)

TOW-TO-TOP MACHINES

Hood Co., R. H., 19 & Westmoreland Sts., Philadelphia 40, Pa.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
TURBO MACHINE CO., Lansdale, Pa. ADV. PG. 177.
WARNER & SWASEY CO., THE, 5701 Carnegie Ave., Cleveland 3, Ohio. ADV. PG. 76, 77.

TOW-TO-YARN MACHINES

RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.

TRAILERS—*Cotton Bale*

Mercury Mfg. Co., 4026 Halsted St., Chicago, Ill.

TRAMRAILS (See Conveyors—Overhead Monorail)

TRANSFER MACHINES

Berks Engineering Co., 6th & Chestnut Sts., Reading, Pa.
Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y.
Paramark—See Paramount Textile Machinery Co.
PARAMOUNT TEXTILE MACHINERY CO., 131 South Wabash Ave., Chicago 3, Ill. ADV. PG. 142.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
SPEIZMAN CO., MORRIS, 508 West Fifth St., Charlotte, N. C. ADV. PG. 224.

TRANSFERS—*Dry*

American Trade Mark Co., 151 West 19th St., New York 11, N. Y.
Kaumagraph Co., 14th & Poplar Sts., Wilmington 99, Del.
Mark-O-Gram—See American Trade Mark Co.

PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
St. Louis Sticker Co., 1906 Pine St., St. Louis 3, Mo.
Stampagraph Company, 79 Alexander Ave., New York 54, N. Y.
Vulcanart—See American Trade Mark Co.

TRANSFORMERS—*Power & Instrument*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
EISLER ENGINEERING CO., INC., 750 South 13th St., Newark 3, N. J. ADV. PG. 238.
G. E.—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

TRANSFORMERS—*Speed* (See Reducers—Speed)

TRANSMISSIONS—*Gear* (See Motors—Gear)

TRANSMISSIONS—*Variable-Speed*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
American Blower Corp., 8111 Tireman Ave., Detroit 32, Mich.
Chicago Pulley & Shafting Co., 23 North Desplaines St., Chicago 6, Ill.
Cub—See Standard Transmission Equip Co.
Dodge Mfg. Corp., Mishawaka, Ind.
Servo-Speed Div., Electro Devices Inc., 4 Godwin Ave., Paterson 1, N. J.
Falk Corp., 3001 West Canal St., Milwaukee, Wis.
Graham Transmissions, Inc., Menomonee Falls, Wis.
JFS-Jr.—See Standard Transmission Equip. Co.
Lewellen Mfg. Co., Columbus, Ind.
Lima Electric Motor Co., The, Findlay Rd., Lima, Ohio
LINK BELT CO., 307 North Michigan Ave., Chicago 1, Ill. ADV. PG. 83.
Allis Co., The Louis, 427 East Stewart St., Milwaukee 7, Wis.
O. E. M.—See Standard Transmission Equip. Co.
P. I. V.—See Link Belt Co.
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis.
Reeves Pulley Co., Columbus, Ind.
Reliance Elec. & Engrg. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio
Servospeed—See Servo-Speed Div.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
SPEED CONTROL CORP., 1430 East 289 St., Wickliffe, Ohio. ADV. PG. 230.
Speed-Trol—See Sterling Electric Motors Inc.
Standard Transmission Equip Co., 78 West Union St., Pasadena 1, Calif.
Sterling Electric Motors Inc., 5401 Telegraph Rd., Los Angeles 22, Calif.
Sterling Elec. Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.
TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis. ADV. PG. 240.
U. S. Electrical Motors, Inc., 200 East Slauson Ave., Los Angeles 54, Calif.
Varidrive—See U. S. Electrical Motors, Inc.
Vari-Speed—See Reeves Pulley Co.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

TRANSMITTERS—*Loom Power*

DIEHL MFG. CO., 1189 Finderne Ave., Somerville, N. J. ADV. PG. 167.

TRANSPORTING—*Machinery* (See also Trucking Service)

Dade Brothers, Claremont Terminal, Jersey City, N. J.
Southern Spindle & Flyer Co., 821 West First St., Charlotte 1, N. C.

TRAPS—*Steam or Compressed-Air*

Anderson Co., V. D., 1935 West 96th St., Cleveland, Ohio
Armstrong Machine Works, Three River, Mich.
Clark Mfg. Co., The, 1830 East 38th St., Cleveland 14, Ohio
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
Nason Co., The, 20 West Washington St., Clarkson, Mich.
Nicholson & Co., W. H., 176 Oregon St., Wilkes-Barre 1, Pa.
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Squires Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio

TRAVELERS—*Bar*

Collins Supply & Equipment Co., Monsey Ave., Scranton 9, Pa.

TRAVELERS—*Ring*

American—See National Ring Traveler Co.
Bal-Epsiloid—See National Ring Traveler Co.
Carter, Inc., A. B., Gastonia, N. C.
Carter Traveler Co., Gastonia, N. C.
Clark Thread Co., Inc., Repr. by: Spool Cotton Co., 264 Ogden St., Newark 4, N. J.
DARY RING TRAVELER CO., Taunton, Mass. ADV. PG. 170.
E. C. Lowboy—See National Ring Traveler Co.
Gravity—See National Ring Traveler Co.
Gravity Express—See National Ring Traveler Co.
HERR MFG. CO., INC., 309 Franklin St., Buffalo 2, N. Y. ADV. PG. 187.
Hicks—See National Ring Traveler Co.
NATIONAL RING TRAVELER CO., P. O. Box 1028, Pawtucket, R. I. ADV. PG. 181.
Sterling Ring Traveler Co., 101 Lindsey St., Fall River, Mass.
U. S. RING TRAVELER CO., Providence, R. I. ADV. PG. 164.
Victor Circle-D—See Victor Ring Traveler Co.
Victor Ring Traveler Co., 20 Mathewson St., Providence 1, R. I.
Wentworth—See National Ring Traveler Co.
Wilson—See National Ring Traveler Co.

TRICHLORETHYLENE (See Solvents)

TRICOT MACHINES (See Knitting Machines)

TRIETHANOLAMINE (See Solvents)

TRIETHYLENE GLYCOL (See Solvents)

TRIMMERS—*Selvage* (See Cutters—Selvage Loop)

TRISODIUM PHOSPHATE (See Sodium—Salts of —Phosphate, Tri-basic)

TROLLEYS—*I-Beam* (See Conveyors—Overhead Monorail or Hoists—Monorail)

TROUGHS (See Cylinders)

TRUCKING SERVICE (See also Carloading Service)

McLean Trucking Co., 617 Waughtown St., Winston-Salem, N. C.
Turner Transfer Co., Greensboro, N. C.

TRUCKS—*Batch Can* (See Carriers—Batch Can)

TRUCKS—*Beam, Bobbin, Cake Drying, Conditioning, Doffing, Dryer, Dyehouse* (See Trucks—Mill)

TRUCKS—*Canvas* (See Baskets—Canvas or Trucks—Mill)

TRUCKS—*Crane* (See Trucks—Elevating & Stacking)

TRUCKS—*Electric*

Automatic Transportation Co., 101 West 87th St., Chicago 20, Ill.
Baker Raulang Co., 1250 West 80th St., Cleveland, Ohio
Barrett-Cravens Co., 4613 South Western Blvd., Chicago 9, Ill.
Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.
Dynamotive—See Automatic Transportation Co.
Elwell-Parker Electric Co., 4274 St. Clair Ave., Cleveland 3, Ohio
Gogetter—See Revolvator Corp.
Howell Industrial Truck Co., 8811 Maywood Ave., Cleveland 2, Ohio
Humdinger—See Howell Industrial Truck Co.
Lewis-Shepard Products, Inc., 125 Walnut St., Watertown, Mass.
Lift Trucks Inc., 2423-2431 Spring Grove Ave., Cincinnati 14, Ohio
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass.
Mercury Mfg. Co., 4026 Halsted St., Chicago, Ill.
Moto-Truc Co., 1953 East 59th St., Cleveland, Ohio
Raymond Corp., The, Greene, N. Y.
Revolvator Corp., 86th St. at Bergen Turnpike, North Bergen, N. J.
Skylift—See Automatic Transportation Co.
Transporter—See Automatic Transportation Co.
Transtractor—See Automatic Transportation Co.
Transrider—See Automatic Transportation Co.
Transveyor—See Automatic Transportation Co.
Wright Hibbard Industrial Electric Truck Co., Pleasant St., Phelps, N. Y.
Yale & Towne Mfg. Co., The, Roosevelt Ave. & Haldeman Ave., Philadelphia 15, Pa.

TRUCKS—*Elevating & Stacking*

Automatic Transportation Co., 101 West 87th St., Chicago 20, Ill.
Baker Raulang Co., 1250 West 80th St., Cleveland, Ohio
Barrett-Cravens Co., 4613 South Western Blvd., Chicago 9, Ill.
Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.
Dynamotive—See Automatic Transportation Co.
Elwell-Parker Electric Co., 4274 St. Clair Ave., Cleveland 3, Ohio
Hi Duty—See Transitier Truck Co.
Howell Industrial Truck Co., 8811 Maywood Ave., Cleveland 2, Ohio
Hyster Co., 2922 Northeast Clackamas St., Portland 12, Ore.
Lewis-Shepard Products, Inc., 125 Walnut St., Watertown, Mass.
Lift Trucks Inc., 2423-2431 Spring Grove Ave., Cincinnati 14, Ohio
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass.
Mercury Mfg. Co., 4026 Halsted St., Chicago, Ill.
Mobilift Corp., 835 S. E. Main St., Portland 14, Ore.
Moto-Truc Co., 1953 East 59th St., Cleveland, Ohio
Raymond Corp., The, Greene, N. Y.
Revolvator Corp., 86 St. at Bergen Turnpike, North Bergen, N. J.
Santi-Top—See Union Steel Products Co.
Service Caster & Truck Corp., 529 North Albion St., Albion, Mich.
Skylift—See Automatic Transportation Co.
Sunray Company, Camp Croff, Spartanburg, S. C.
Towmotor Corp., 1226 East 152 St., Cleveland 10, Ohio
Transitier Truck Co., 2477 Northwest 23rd Ave., Portland, Ore.
Transporter—See Automatic Transportation Co.
Transrider—See Automatic Transportation Co.
Transtaker—See Automatic Transportation Co.
Transtractor—See Automatic Transportation Co.
Transveyor—See Automatic Transportation Co.
Union Steel Products Co., Pine & Berrien Sts., Albion, Mich.
Wright Hibbard Industrial Electric Truck Co., Pleasant St., Phelps, N. Y.
Yale & Towne Mfg. Co., The, Roosevelt Ave. & Haldeman Ave., Philadelphia 15, Pa.

TRUCKS—*Fiber* (See Trucks—Mill)

TRUCKS—*Fork Lift* (See Trucks—Elevating & Stacking)

TRUCKS—*Hand-Lift*

American Pulley Co., The, 4200 Wissahickon Ave., Philadelphia 29, Pa.
Barrett-Cravens Co., 4613 South Western Blvd., Chicago 9, Ill.
Clark Co., George P., Windsor Locks, Conn.
Colson Corp., The, Cedar St., Elyria, Ohio
Commander—See Fairbanks Co., The
FAIRBANKS CO., THE, 393 Lafayette St., New York 3, N. Y. ADV. PG. 188.
Hamilton Caster & Mfg. Co., 1637 Dixie Highway, Hamilton, Ohio
Howe Scale Co., The, Rutland, Vt.
Ironbound Box & Lumber Co., Hillside, N. J.
Lewis-Shepard Products, Inc., 125 Walnut St., Watertown, Mass.
Lift Trucks Inc., 2423-2431 Spring Grove Ave., Cincinnati 14, Ohio
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass.
Orangeville Mfg. Co., Orangeville, Pa.
Lewis & Co., J. W., Exchange St., Spartanburg, S. C.
Raymond Corp., The, Greene, N. Y.
Red Giant—See Revolvator Corp.
Revolvator Corp., 86th St. at Bergen Turnpike, North Bergen, N. J.
Service Caster & Truck Corp., 529 North Albion St., Albion, Mich.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Towmotor Corp., 1226 East 152 St., Cleveland 10, Ohio
Weld-Bilt—See West Bend Equipment Corp.
Wellington Machine Co., Wellington, Ohio
West Bend Equipment Corp., 210 Water St., West Bend, Wisc.
Yale & Towne Mfg. Co., The, Roosevelt Ave. & Haldeman Ave., Philadelphia 15, Pa.

TRUCKS—*Lap* (See Trucks—Mill)

TRUCKS—*Lift Trucks* (See Trucks—Electric, Elevating & Stacking, or Hand Lift)

TRUCKS—*Loom Beam* (See Trucks—Mill)

TRUCKS—*Mill*

All Steel Welded Truck Corp., 1149 Railroad Ave., Rockford, Ill.
Blickman, Inc., S., 411 Gregory Ave., Weehawken, N. J.
Bristol Metal Products Corp., Box 616, Bristol, Tenn.
Clark Co., George P., Windsor Locks, Conn.
COLEMAN CO., INC., Greenville, S. C.
ADV. PGS. 80, 81.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
COOK P-N MACHINE CO. INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Daniels Inc., C. R., Daniels, Md.
Elwell-Parker Electric Co., 4274 St. Clair Ave., Cleveland 3, Ohio
EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.
ADV. PG. 248.
Fedco—See Federal Fibre Corp.
Federal Fibre Corp., 3704-10th St., Long Island City, N. Y.
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. ADV. PG. 219.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
Glasco Equipment Corp., 2 Waite St., Paterson 2, N. J.
Hamilton Caster & Mfg. Co., 1637 Dixie Highway, Hamilton, Ohio
Hyster Co., 2922 Northeast Clackamas St., Portland 12, Ore.
Ironbound Box & Lumber Co., Hillside, N. J.
Kennett—See Fibre Specialty Mfg. Co.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Lane & Bros., W. T., Poughkeepsie, N. Y.
Lewis Co., G. B., 426 Montgomery St., Watertown, Wis.
Lewis & Co., J. W., Exchange St., Spartanburg, S. C.
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass.
Meese, Inc., 108 St. Michaels Ave., Madison, Ind.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
Morris Textile Equipment Corp., 659 Berkeley St., Orange, N. J.
NUTTING TRUCK & CASTER CO., Faribault, Minn.
ADV. PG. 226.
Orangeville Mfg. Co., Orangeville, Pa.
Paddock Co., J. C., Spartanburg, S. C.
Service Caster & Truck Corp., 529 North Albion St., Albion, Mich.
Shamrock—See Meese, Inc.
SPAULDING FIBRE CO., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Standard Mill Supply Co., 1064 Main St., Pawtucket, R. I.
STEELE CANVAS BASKET CO., INC., 199 Concord Turnpike, Cambridge 40, Mass. ADV. PG. 206.
STERLING ENGINEERING & MFG. CO., 173 Gilligan St., Wilkes Barre, Pa. ADV. PG. 229.
Sunray Company, Camp Croff, Spartanburg, S. C.
TEXTILE MACHINERY, INC. DIV., PORTLAND COPPER & TANK WORKS, INC., 80 Second St., South Portland, Me. ADV. PG. 98.
Societe Anonyme Adolphe Sauer, Arbon, Switzerland
Weld-Bilt—See West Bend Equipment Corp.
Wellington Machine Co., Wellington, Ohio
West Bend Equipment Corp., 210 Water St., West Bend, Wis.

TRUCKS—*Mop* (See Floor Cleaning, Sanding, Scrubbing & Polishing Machines)

TRUCKS—*Pallet* (See Trucks—Hand Lift)

TRUCKS—*Pin-Board*

Bristol Metal Products Corp., Box 616, Bristol, Tenn.
EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.
ADV. PG. 248.
FIBRE SPECIALTY MFG. CO., Girard Trust Bldg., Philadelphia 2, Pa. ADV. PG. 219.
Fisher Mfg. Co., Box 244, Hartwell, Ga.
Kennett—See Fibre Specialty Mfg. Co.
King Co., Alfred B., Ft. of Devine, North Haven, Conn.
Market Forge Co., 35 Garvey St. Everett Station, Boston 49, Mass.
Metal Products Corp., 52 West 19th St., Weehawken, N. J.
STERLING ENGINEERING CO., 173 Gilligan St., Wilkes-Barre, Pa. ADV. PG. 229.
Sunray Company, Camp Croff, Spartansburg, S. C.

TRUCKS—*Platform* (See Trucks—Electric or Hand Lift)

TRUCKS—*Quill-Board* (See Trucks—Mill)

TRUCKS—*Reel* (See Trucks—Mill)

TRUCKS—*Roving* (See Trucks—Mill)

TRUCKS—*Sliver Can* (See Trucks—Mill)

TRUCKS—*Tiering* (See Trucks—Elevating & Stacking)

TRUCKS—*Warp* (See Trucks—Mill)

TRUCKS—*Yarn Handling* (See Trucks—Mill)

TUBES—*Cloth* (See Cores)

TUBES—*Fiber & Plastic*

AMERICAN PAPER TUBE CO., Box 430, Woonsocket, R. I. ADV. PG. 252.
Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
Engineered Plastics Inc., Gibsonville, N. C.
Formica Co., 4614 Spring Grove Ave., Cincinnati, Ohio
Laminated Sheet Products Corp., 449 Neponset St., Norwood, Mass.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
Ohmoid—See Wilmington Fibre Specialty Co.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
St. Regis Paper Co., Panelyte Div., 230 Park Ave., New York, N. Y.
SONOCO PRODUCTS CO., Hartsville, S. C.
ADV. PG. 175.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
SPAULDING FIBRE CO., 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Sunray Company, Camp Croff, Spartanburg, S. C.
Synthane Corp., Oaks, Pa.
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y.
Werdohl, Germany, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.
Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.

TUBES—*Metal* (Yarn)

Gaston County Dyeing Mach. Co., Stanley, N. C.
Globe Steel Tubes Co., Milwaukee 46, Wis.
Globeiron—See Globe Steel Tubes Co.
Gloweld—See Globe Steel Tubes Co.
Morton Machine Works, Columbus, Ga.
Royersford Needle Works, Inc., Royersford, Pa.

TUBES—*Paper*

AMERICAN PAPER TUBE CO., Box 430, Woonsocket, R. I. ADV. PG. 252.
American Paper Prods. Co., 2131 East Rush St., Philadelphia 34, Pa.
Canister Company, Broad & Fifth St., Phillipsburg, N. J.
CONTINENTAL-DIAMOND FIBRE CO., Newark, Del.
ADV. PG. 88, 89.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Middlesex Paper Tube Co., 345 Chelmsford St., Lowell, Mass.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
Platt Corp., 1415 Key Highway, Baltimore 30, Md.
SONOCO PRODUCTS CO., Hartsville, S. C.
ADV. PG. 175.
Werdohl, Germany, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

TUBES—*Perforated*

AMERICAN STANDARD FABRICATORS CORP., 355 Walton Ave., New York, N. Y. ADV. PG. 156.
DODENHOFF & CO. INC., W. D., P. O. Box 3537, Greenville, S. C. ADV. PG. 169.
Dytex—See Sonoco Products Co.
Gaston County Dyeing Mach. Co., Stanley, N. C.
Larson Tool & Stampg. Co., Attleboro, Mass.
Morton Machine Works, Columbus, Ga.
Neptco—See New England Paper Tube Co.
New England Paper Tube Co., 173 Weeden St., Pawtucket, R. I.
SONOCO PRODUCTS CO., Hartsville, S. C.
ADV. PG. 175.

TUBES—*Redraw, Caps & Chucks*

Engineered Plastics Inc., Gibsonville, N. C.
Richardson Co., The, 2698 Lake St., Melrose Park, Ill.
SPAULDING FIBRE CO., THE, 310 Wheeler St., Tonawanda, N. Y. ADV. PG. 103.
Synthane Corp., Textile Div., Oaks, Pa.

TUBES—*Wood*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me.
ADV. PG. 176.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Heckman Co., J. F., 42 Weybosset St., Providence 3, R. I.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C.
ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
LOWELL SHUTTLE CO., Tanner St., Lowell, Mass.
ADV. PG. 186.
U. S. BOBBIN & SHUTTLE CO., 135 Bradford St., Lawrence, Mass. ADV. PG. 195.

TUBING (See Pipes or Steel—Tubing)

TUBING—*Knit Dye*

Textile Laboratories, P. O. Box 1003, Gastonia, N. C.

TUBS—*Dye* (See Tanks—Corrosion-Resisting or Wood)

TUBS—*Soaking* (See Tanks)

TURBINES—*Hydraulic*

Fitz Water Wheel Co., Penn. St. & P. R. E., Hanover, Pa.
Leffel & Co., The, James, 426 East St., Springfield, Ohio
Morgan Smith Co., S., Hartley & Lincoln Sts., York, Pa.

TURBINES—*Steam*

Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Dean Hill Pump Co., 4000 E. 16th St., Indianapolis, Ind.
Murray Iron Works Co., 1106 Washington St., Burlington, Iowa
Terry Steam Turbine Co., Terry Square, Hartford, Conn.

TURBO COMPRESSORS (See Air Compressors)

TURBO GENERATORS (See Generators—AC & DC)

TURKEY RED OIL (See Oil—Fiber Process)

TURNING & LOADING MACHINES

Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.

TURNINGS—*Wood*

AMERICAN BOBBIN CO., 47 Whipple St., Lewiston, Me. ADV. PG. 176.
Atwood Crawford Co., 5 Central Ave., Pawtucket, R. I.
Cylinder Mfg. Co., 2 Maitland Ave., Hawthorne, N. J.
Hardwood Mfg. Co., Inc., P. O. Box 929, Greenville, S. C.
Heckman Co., J. F., 42 Weybosset St., Providence 3, R. I.
LEAGUE MFG. CO., G. F., Box 125, Greenville, S. C. ADV. PG. 254.
Leamaco—See League Mfg. Co., G. F.
Paramount Oilless Bearing Co., Inc., 99 Hope Ave., Worcester, Mass.
Tweedles & Smalley (1920) Ltd., Rochdale, England—Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

TWISTERS—*Ring* (See Twisters—Yarn)

TWISTERS—*Rope & Cordage*

HASKELL-DAWES MACH. CO. INC., 2231 East Ontario St., Philadelphia, Pa. ADV. PG. 204, 212, 220.

TWISTERS—*Yarn* (See also Throwing Machines or Up Twisters)

Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Brownell, Inc., G. L., Worcester, Mass.
Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa.
HASKELL-DAWES MACH. CO. INC., 2231 East Ontario St., Philadelphia, Pa. ADV. PG. 204, 212, 220.
ISOTTA FRASCHINI, Milan, Italy, Repr. by: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. ADV. PG. 242.
Kearny Mfg. Co. Inc., 681 Schuyler Ave., Kearny, N. J.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.
SANT' ANDREA, Novara, Italy—Represented by Ernest L. Frankl Assocs., 515 Madison Ave., New York 22, N. Y. ADV. PG. 117.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa.
Whitin Machine Works, Whitinsville, Mass.

TWIST SETTERS

American Sterilizer Co., Erie, Pa.
Hewe Machine Co., Passaic, N. J.
INDUSTRIAL DRYER CORP, 432 Fairfield Ave., Stamford, Conn. ADV. PG. 210.
Kearny Mfg. Co. Inc., 681 Schuyler Ave., Kearny, N. J.
LYDON BROTHERS INC., 85 Zabriskie St., Hackensack, N. J. ADV. PG. 124.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 111.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
Wak Industries, 1814 South Tryon St., Charlotte, N. C.

TWIST SETTING AGENTS

Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nopco Chemical Co., 1st & Essex Sts., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Seydel-Wooley & Co., 748 Rice St., N.W., Atlanta, Ga.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.

TYING MACHINES—*Bundle*

Bunn Co., B. H., 7605 Vincennes Ave., Chicago, Ill.
HAYSSEN MFG. CO., 1305 St. Clair Ave., Sheboygan, Wis. ADV. PG. 173.
National Bundle Tyer Co., 320 West Adrian St., Blissfield, Mich.
PRINCE SMITH & STELLS, LTD., Keighley, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 119.
Saxmayer—See National Bundle Tyer Co.
Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill.

TYING-IN MACHINES—*Warp* (See also Leasing Machines)

Barber-Colman Co., Rockford, Ill.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
TITAN, A-S, Copenhagen, Denmark, Repr. by: Edda International, 468 Fourth Ave., New York 16, N. Y. ADV. PG. 92.

UNIONS—*Rotary* (See Joints—Revolving)

UP TWISTERS

Carniti & C., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
Fletcher Works, Glenwood Ave. & Second St., Philadelphia, Pa.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
Unirail—See Universal Winding Co.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa.
Universal Winding Co., P. O. Box 1605, Providence, R. I.
Whitin Machine Works, Whitinsville, Mass.

USED MACHINERY & EQUIPMENT

Advanced Textile Co., 327 Elmgrove Ave., Providence, R. I.
Bialek & Co., Theodore, 306 Straight St., Paterson, N. J.
Blank Co., Inc., A. & M., 301-313 E. 22nd St., at Seventh Ave., Paterson 4, N. J.
Blank Textile Machinery, Moe, 523-525 E. 18th St., Paterson 4, N. J.
Bresani, Joseph, Northwest Cor. Hancock & Somerset St., Philadelphia 33, Pa.
BURKE, W. F., 2749 Nottingham-Way, Trenton 9, N. J. ADV. PG. 304.
BUSINESS ENTERPRISES, 30 W. Houston St., New York 12, N. Y. ADV. PG. 304.
Consolidated Products Co., Inc., 15 Park Row, New York 38, N. Y.
CORNELL SALES, 5311 Cornell, Chicago 15, Ill. ADV. PG. 304.
Crescent Corp., 397 Bay St., Fall River, Mass.
Doyle & Miller, 6600 Baltimore Ave., Fernwood, Pa.
Dunn Corp., 532 Kinsley Ave., Box 270, Providence, R. I.
Eastern Textile Co., 296 Lincoln Ave., Fall River, Mass.
Egan, Inc., George W., 239 Main St., Woonsocket, R. I.
Electric Equipment Co., P. O. Box 51, Rochester 1, N. Y.
FITZGERALD, JAMES E., 10 Purchase St., Fall River, Mass. ADV. PG. 304.
FURNANS & SON, JOHN E., 488 Pleasant St., New Bedford, Mass. ADV. PG. 304.
Fyans & List Machinery Co., Inc., 210 Academy Bldg., Fall River, Mass.
GAINES TEXTILE MACHINERY CO., INC., 141 W. 17th St., New York, N. Y. ADV. PG. 304.
Green Co., The Marshall, 3 Underwood St., Worcester, Mass.
INDUSTRIAL PRODUCTS OF AMERICA, 140 Market St., Paterson, N. J. ADV. PG. 303.
I. P. A. SOUTHERN, INC., South Carolina National Bank Bldg., Greenville, S. C. ADV. PG. 303.
JASWELL & SON, INC., PETER, 1741 Fall River Ave., Seekonk, Mass. ADV. PG. 306.
Kimmel Machinery Co., Leon, P. O. Box 1316, Greenville, S. C.
LEWIS, J. LAWRENCE, P. O. Box 121, Tilton, N. H. ADV. PG. 304.
MACHINERY SALES CORP., New Bedford, Mass. ADV. PG. 302.
McCaffrey & Son, Inc., L. J., 355 Barton St., Pawtucket, R. I.
McCloskey, Inc., John J., West Knight Ave., Collingswood 7, N. J.
McDowell Assoc., Norman M., 2568 Park Ave., Bronx 51, N. Y.
McKittrick Co., Frank G. W., 78 Fletcher St., Lowell, Mass.
Miller Mach. Co., 66 Railroad Ave., Paterson, N. J.
Paterson Textile Machinery Exchange, Inc., 22 Spruce St., Paterson, N. J.
Pawtucket Mill Supply Co., 240 York Ave., Pawtucket, R. I.
PENNSYLVANIA SPOOL & EQUIPMENT CO., 530 North Fulton St., Allentown, Pa. ADV. PG. 306.
Rabinowitz & Sons, Wm., 214-222 Hamilton St., Allentown, Pa.
REPUBLIC TEXTILE EQUIP. CO., 40 Worth St., New York 13, N. Y. ADV. PG. 305.
Rothkopf Co., Inc., Mac M., 317 Bushwick Ave., Brooklyn 6, N. Y.
Shaffer & Max, 33 North Third St., Allentown, Pa.
Solomon, Michael, 131 Spring St., New York, N. Y.
Speed & Co., James, 522 Andover St., Lawrence, Mass.
SPEIZMAN & CO., MORRIS, 508 W. Fifth St., Charlotte 1, N. C. ADV. PG. 307.
Speizman & Son, 921 Philadelphia Ave., West Pittston, Pa.
Standard Mill Supply Co., 1080 Main St., Pawtucket, R. I.
Stave & Kessler, 106 Kearney St., Box 1413, Paterson, N. J.
Textile Auxiliaries, 15-17 Ormsbee Ave., Providence, R. I.
UNITED TEXTILE MACHINERY CO., 52-12th St., Fall River, Mass. ADV. PG. 306.
Wheeler, Frank W., 1837 East Ruan, Philadelphia 24, Pa.
WHITEHEAD SUPPLY & ENGRG. CO., 533 Main St., Melrose, Mass. ADV. PG. 306.
Wilson Lewith Machy. Co., 1317 Elizabeth Ave., Charlotte, N. C.
Windle & Co., J. H., 231 South Main St., Providence 3, R. I.

V-BELTS (See Belts—V)

VACUUM CLEANING MACHINES (See Cleaners—Portable Industrial Floor Vacuum)

VACUUM NOIL-HANDLING MACHINES (See Collectors—Broken End Pneumatic)

VALVES

Air Check ..... A
Brass & Bronze Gate, Globe & Check ..... B
Corrosion-Resisting Alloy Gate, Globe & Check C
Diaphragm-Operated ..... D
Expansion ..... E
Float ..... F
Hydraulic ..... G
Iron & Steel Gate, Globe & Check ..... H
Lead Lined I
Motor-Operated ..... J
Needle ..... K
Pressure-Regulating L
Rubber-Lined ..... M
Safety, Pressure-Relief ..... N
Solenoid ..... O
Stainless Steel ..... P

Airchek—See Pennsylvania Pump & Compressor Co.
Air Cushion—See Pennsylvania Pump & Compressor Co.
Alloy Steel Prods. Co., 1300 West Elizabeth Ave., Linden, N. J. ..... C, P
American Chain & Cable Co. Inc., R-P&C Valve Div., Tulpehocken St., Reading, Pa. ..... B, H, I, J, K
American Hard Rubber Co., 93 Worth St., New York 13, N. Y. ..... F, M
Ampco Metal Inc., 1706 South 38th St., Milwaukee 46, Wis. ..... K
Bailey Meter Co., 1080 Ivanhoe Road, Cleveland, Ohio ..... D, I, L
Barber-Colman Co., Rockford, Ill. ..... I, O
Barrett Haentjens & Co., Hazelton, Pa. ..... B
Bellows Co., The, Akron 9, Ohio ..... O
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn. ..... D, I, L
CALDWELL CO., W. E., Brook & Brandeis Sts., Louisville, Ky. ..... F
ADV. PG. 251.
Cash Co., A. W., 540 North 18 St., Decatur, Ill. ..... D, G, I, L
Causul—See Lunkenheimer Co.
Certified—See Cooper Alloy Foundry Co., The
Chapman Valve Mfg. Co., The, Hampshire St., Indian Orchard, Mass. ..... B, H, I
Cherry-Burrell Corp., 47 West Randolph St., Chicago 6, Ill. ..... B
Clark Mfg. Co., The, 1830 East 36th St., Cleveland 14, Ohio L
Consolidated—See Manning & Maxwell & Moore Inc.
COOPER ALLOY FOUNDRY CO., THE, Hillside, N. Y. ..... P
ADV. PG. 183.
Crane Co., 836 South Michigan Ave., Chicago 5, Ill. ..... A, B, F, H, I, J, K, L, M, N
Cutler-Hammer Inc., 562 North 12th St., Milwaukee 1, Wis. I
Darling Valve & Mfg. Co., Williamsport 61, Pa. ..... A, B, G, H, I, J, M
Dunning & Boschert Press Co., 382 West Water St., Syracuse, N. Y. ..... B, G, L
Durco—See Durlron Company
Durlron Company, Dayton 1, Ohio ..... D, I, K
FAIRBANKS CO., THE, 393 Lafayette St., New York 3, N. Y. ..... B, H, K
ADV. PG. 188.
Fisher Governor Co., 203 South First Ave., Marshalltown, Iowa ..... D, F, L
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa. L
Foxboro Co., Inc., Foxboro, Mass. ..... D, I, J, K, L, O
Foster Engineering Co., 835 Lehigh Ave., Union, N. J. ..... A, D, F, L, N
Golden Anderson Valve Spec. Co., Keenan Bldg, Pittsburgh, Pa. ..... D, F, G, L, N, O
Gradutrol—See Minneapolis-Honeywell Regulator Co.
Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I. ..... B, D, I, M
Hancock—See Manning & Maxwell & Moore, Inc.
Haveg Corp., Newark, Del. ..... C, D
Jenkins Bros., 100 Park Ave., New York, N. Y. ..... A, B, H, I, J, K
JOHNSON CORP., THE, Three Rivers, Mich. ..... O
ADV. PG. 253.
JOHNSON SERVICE CO., 507 East Michigan St., Milwaukee 2, Wis. ..... C, J, O
ADV. PG. 249.
Kennedy Valve Mfg. Co., Elmira, N. Y. ..... A, B, G, H, I
Klipfel Valves Inc., 1075 Lincoln Ave., Hamilton, Ohio ..... D, F, L, N
Lead Lined Iron Pipe Co., 1 Broadway, Wakefield, Mass. ..... D, H
Limitorque—See Philadelphia Gear Works, Inc.
Lunkenheimer Co., Waverly Ave. & Beekman St., Cincinnati, Ohio ..... A, B, H, I, J, K, N, P
Manning & Maxwell & Moore, Inc., 250 East Main St., Stratford, Conn. ..... B, H, N
Marsh Corp., James P., Skokie, Ill. ..... B, J, L, O
Mason-Neilan Regulator Co., 1195 Adams St., Boston 24, Mass. ..... D, I, L
McAlear Mfg. Co., 1901 South Western Ave., Chicago 8, Ill. ..... D, F, L
Minneapolis-Honeywell Regulator Co., Industrial Div., Seventh & Grange St., Philadelphia 70, Pa. ..... D, I, L, O
Norgren Co., C. A., 3400 South Elati St., Englewood, Col. ..... D
N. M. D.—See Lunkenheimer Co.
Morton Machine Works, Columbus, Ga. ..... H, K, P
National Lead Co., 111 Broadway, New York 6, N. Y. ..... B
Nordstrom—See Rockwell Mfg. Co.
Norgren Co., C. A., 3400 South Elati St., Englewood, Col. ..... A, J, L, N
Oilgear Co., The, 1560 West Pierce St., Milwaukee 4, Wis. ..... G
Ohio Injector Co., The, Wadsworth, Ohio ..... A, B, H, I, J, K
OIC—See The Ohio Injector Co.
Oil Rite Corp., 2318 Waldo Blvd., Manitowoc, Wis. ..... J, O
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio ..... A, G
Penn Controls Inc., Goshen, Ind. ..... D
Permutit Co., 330 West 42 St., New York 36, N. Y. ..... I, M
Philadelphia Gear Works, Inc., G St. Below Erie Ave., Philadelphia 34, Pa. I
Pilotrol—See Bailey Meter Co.
William Powell Co., 2525 Spring Grove, Cincinnati 22, Ohio ..... B, C, G, H, I, J, K, N
Powers Regulator Co., 3400 Oakton St., Skokie, Ill. ..... D
Renewo—See Lunkenheimer Co.
Resisto Pipe & Valve Co., 262 Bridge St., Cambridge 41, Mass. ..... H
Rockwell Manufacturing Co., 400 Lexington Ave., Pittsburgh 8, Pa. ..... I, K
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y. ..... I, O
Saran Line Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich. ..... D, K, M
Sarco Company, Inc., 350 Fifth Ave., New York 1, N. Y. ..... O
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa. ..... B, D, H, I, L, N, O
Morgan Smith Co., S., Hartley & Lincoln Sts., York, Pa. ..... G, I, K, L
Squires Co., C. E., 18502 Syracuse Ave., Cleveland 10, Ohio ..... D, L
Stockham Valves & Fittings, 4000 Tenth Ave., North Birmingham 2, Ala. ..... B, H, I, J, K
Supreme Electric Prod. Corp., 194 Vassar St., Rochester 7, N. Y. ..... O
Swartwout Company, 18511 Euclid Ave., Cleveland 12, Ohio ..... D, L
Syncro-Valve—See Bristol Co., The
Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y. ..... D, I
Tolman Mfg. Co., 19 W. Third St., So. Boston 27, Mass. ..... J, L
Tri-Clover Machine Co., 2400 60 St., Kenosha, Wis. ..... F, K
United States Rubber Co., 1230 Sixth Ave., New York 20, N. Y. ..... M
Vickers, Inc., 1588 Oakman Blvd., Detroit 22, Mich. ..... G, L, N, O
Vilter Manufacturing Co., 2217 South First St., Milwaukee 7, Wis. ..... A, H
Vogt Machine Co., Henry, Tenth & Ormsby Sts., Louisville 10, Ky. ..... A, E, G, H, I, J, K
Wakefield—See Lead Lined Iron Pipe Co.
Walworth Co., 60 East 42 St., New York 17, N. Y. ..... B, G, H, I, J, K
Weston Electrical Inst. Corp., 614 Frelinghuysen Ave., Newark 5, N. J. ..... D, L

VANADIUM CHLORIDE

Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Vanadium Corp. of America., 420 Lexington Ave., New York 17, N. Y.

VAT COLORS (See Dyes)

VAT DYES (See Dyes)

VATS—Dye (See Tanks—Corrosion Resisting)

VEGETABLE DYES (See Dyes)

VEGETABLE GUMS (See Gums)

VENTILATION EQUIPMENT (See Air Conditioners—Central Type or Fans—Exhaust and Ventilation)

VICARA YARNS & FIBERS (See Yarns & Fibers)

VINYL YARNS & FIBERS (See Yarns & Fibers)

VINYON YARNS & FIBERS (See Yarns & Fibers)

VISCOMETERS

Brabender Corp., Rochelle Park, N. J.
Bristol Co., The, 103D Bristol Rd., Waterbury 20, Conn.
Calgon Inc., Hagan Bldg., Pittsburgh 30, Pa.
Fischer & Porter Co., 75 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.
G. E.—See General Elec. Co.
General Elec. Co., Apparatus Sls. Div., Bldg. 23, Schenectady, N. Y.
Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.
Testing Machines, Inc., 123 West 64th St., New York, N. Y.
Viscograph—See Brabender Corp.

VITRIOL (See Acids—Sulfuric)

VOLTMETERS (See Ammeters & Voltmeters)

WARP COMPRESSORS

Allen Warper Co., 40-44 Church St., Lowell, Mass.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.

WARP KNITTING MACHINES (See Knitting Machines—Milanese, Raschel, or Tricot)

WARP-SIZING MACHINES (See Slashers)

WARP TYING-IN MACHINES (See Tying-In Machines—Warp)

WARP-WRAPPING MACHINES

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.

WARPERS—*Ball and/or Sliver*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass.
ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
Barber-Colman Co., Rockford, Ill.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
Thies, B., Coesfeld/Westf, Germany

WARPERS—*Beam*

ALLEN BEAM CO., 136 River Rd., New Bedford, Mass.
ADV. PG. 193.
Allen Warper Co., 40-44 Church St., Lowell, Mass.
Barber-Colman Co., Rockford, Ill.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.
ADV. PG. 96.
DAVIS & FURBER MACHINE CO., North Andover, Mass.
ADV. PG. 172.
Fitz Water Wheel Co., Penn St. & P. R. E., Hanover, Pa.
KIDDE MFG. CO., INC., Bloomfield, N. J.
ADV. PG. 150, 151.
Reiner, Inc., Robert, 550-64 Gregory Ave., Weehawken, N. J.
Schlafhorst & Co., W., M. Gladbach, Germany
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.

WARPERS—*Spool*

HILL MACHINE CO., E. F., 181 E. Seventh St., Paterson 4, N. J. ADV. PG. 228.

WASHERS—*Non-Metallic*

CONTINENTAL-DIAMOND FIBRE CO., Newark, Del. ADV. PG. 88, 89.

WASHING MACHINES—*Felt-Goods*

Fleet-Line—See Riggs & Lombard, Inc.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Krantz, H., Aachen, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Tensitrol—See Hunt Machine Co., Rodney

WASHING MACHINES—*Knit-Goods*

Burlington Engrg. Co. Inc., Graham, N. C.
Con-O-Matic—See Proctor & Schwartz, Inc.
Fleet Line—See Riggs & Lombard, Inc.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
KLAUDER WELDON GILES CO., Adams Ave. & Leiper St., Philadelphia, Pa. ADV. PG. 140.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
SMITH, DRUM & CO., Allegheny Ave. & North 5th, Philadelphia 33, Pa. ADV. PG. 132, 133.
Tensitrol—See Hunt Machine Co., Rodney
Troy Laundry Machinery Div., American Machine & Metals, Inc., East Moline, Ill.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

WASHING MACHINES—*Warp*

BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Krantz, H., Aachen, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
UNISTEL TEXTILE MACHINE CORP., 225 Westchester Ave., Port Chester, N. Y. ADV. PG. 148.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

WASHING MACHINES—*Wool* (See Scouring Machines)

WASHING MACHINES—*Woven-Fabric*

ARLINGTON MACHINE WORKS DIV., AMW CORP., 78 Bow St., Arlington 74, Mass. ADV. PG. 216.
BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
Burlington Engrg. Co. Inc., Graham, N. C.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
COOK P-N MACHINE CO. INC., 365 Dorchester Ave., South Boston 27, Mass. ADV. PG. 143.
Fleet Line—See Riggs & Lombard, Inc.
HUNT MACHINE CO., RODNEY, 72 Mill St., Orange, Mass. ADV. PG. 86, 87.
Hunter Mach. Co., James, North Adams, Mass.
Krantz, H., Aachen, Germany—Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
MAWACO MACHINE CO., 56 Bogard St., Brooklyn, N. Y. ADV. PG. 198.
McKIERNAN-TERRY CORP., 505 Manor Ave., Harrison, N. J. ADV. PG. 130, 131.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 110.
Prosperity Co., The, East Erie Blvd., Syracuse, N. Y.
RIGGS & LOMBARD, INC., Ft. of Suffolk St., Lowell, Mass. ADV. PG. 146.
Scott & Co. Inc., Ernest, 189 Anawan St., Fall River, Mass.
Tensitrol—See Hunt Machine Co., Rodney
TEXTILE SHOPS, Spartanburg, S. C. ADV. PG. 189.
TOWER IRON WORKS, 50 Borden St., Providence 3, R. I. ADV. PG. 134, 135.
Verduin Machine Corp., John, 357 Tenth Ave., Paterson, N. J.
Troy Laundry Machinery Div., American Machine & Metals, Inc., East Moline, Ill.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
WIESNER-RAPP CO., 1600 Seneca St., Buffalo 10, N. Y. ADV. PG. 155.

WASTE MACHINES

Barnes Improved—See Gastonia Textile Machinery Corp. Inc.
Carniti & Co., A., Officine Fonderie Meccaniche, Tessilli Oggionesi, Oggiono Como, Italy
DAVIS & FURBER MACHINE CO., North Andover, Mass. ADV. PG. 172.
Gastonia Textile Machinery Corp. Inc., 1801 Hedgewood Pl., Gastonia, N. C.
KIRKMAN & DIXON MACHINERY CO., Greenwood, S. C. ADV. PG. 230.
PLATT BROS. & CO., LTD., Oldham, England. Repr. by: Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. ADV. PG. 118.
PROCTOR & SCHWARTZ, INC., Seventh St. & Tabor Rd., Philadelphia 20, Pa. ADV. PG. 116.
RIETER & CO., GERMANY—Represented by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. ADV. PG. 125.
Whitin Machine Works, Whitinsville, Mass.

WATER HEATERS (See Heaters—Water)

WATERPROOFING AGENTS—*Fabric*

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Resinous Chem. Corp., 102 Foster St., Peabody, Mass.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Atlantic Refining Co., 260 South Broad St., Philadelphia, Pa.
Bick, Inc., Hans C., 13th & Muhlenberg Sts., Reading, Pa.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Carbide & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Continental Chemical Corp., 86 Lexington Ave., Passaic, N. J.
Cuprinol Div., Darworth, Inc., Simsbury, Conn.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
du Pont de Nemours & Co., Inc., E. I., Grasselli Dept., Wilmington 98, Del.
Eimer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Flintkote Co., The, Ind. Prods. Div., 3 West 46th St., New York 20, N. Y.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hooker Electrochemical Co., 4-47th St., Niagara Falls, N. Y.
Horn Co., A. C., 10 St. & 44 Ave., Long Island City 1, N. Y.
Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.
Kearny Mfg. Co. Inc., 681 Schuyler Ave., Kearny, N. J.
LAUREL SOAP MFG. CO., INC., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
LINDER & CO., 296 North Beacon St., Boston 35, Mass. ADV. PG. 286.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Quaker Chemical Products Corp., Technical Div., Conshohocken, Pa.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Speco Inc., 7308 Associate Ave., Cleveland 9, Ohio
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Tex Chem. Co., 20-21 Wagaraw Rd., Fairlawn, N. J.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.

WATER REPELLENTS

American Cyanimide Co., Textile Resin Dept., Bound Brook, N. J.
Carbine & Carbon Chemicals Co. Div. Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Dow-Corning Corp., Midland, Mich.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Speco Inc., 7308 Associate Ave., Cleveland 9, Ohio

WATER TREATMENT—*Slime & Waste Control Equipment*

Akon—See Allis-Chalmers Mfg. Co.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
Holyoke Machine Co., 505 Main St., Holyoke, Mass.
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
Proportioneers, Inc., 345 Harris Ave., Providence 1, R. I.
Wallace & Tiernan, Inc., 11 Mill St., Belleville 9, N. J.

WATER TREATMENT—*Slime & Waste Control, Chemical*

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Dow Chemical Co., Midland, Mich.
Guardian Chem. Corp., 10-15 43 Ave., Long Island City, N. Y.
Magnus Chemical Co., Inc., 180 South Avenue, Garwood, N. J.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., 6th & Chestnut Sts., Philadelphia 6, Pa. ADV. PG. 284.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Vanderbilt Co., Inc., R. T., 230 Park Ave., New York 17, N. Y.

WATER TREATMENT—*Water Softening Equipment* (See also Purifiers—Water)

Akon—See Allis-Chalmers Mfg. Co.
Allis-Chalmers Mfg. Co., 1120 South 70 St., Milwaukee 1, Wis.
American Water Softener Co., SE Cor. Lehigh Ave. & Fourth, Philadelphia 33, Pa.
Bacharach, Inc., E. W., Rialto Bldg., Kansas City, Mo.
De-Acidite—See Permutit Co.
Dorr Co., Barry Place, Stamford, Conn.
Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Fairbanks-Morse Co., 600 South Michigan, Chicago, Ill.
Filter Mfg. Co., Roberts, 636 Columbia Ave., Darby, Pa.
Graver Water Conditioning Co., 216 West 14 St., New York 11, N. Y.
Jeffrey Mfg. Co., 962 North Fourth St., Columbus 16, Ohio
Modern Water Equipment Co., West Chicago, Ill.
Penfield Products, Inc., Meriden, Conn.
Permutit Co., 330 West 42 St., New York 36, N. Y.
Proportioneers, Inc., 345 Harris Ave., Providence 1, R. I.
Sli-Not Belting Corp., Box 3061, Greensboro, N. C.
Worthington Corp., Harrison & Worthington Aves., Harrison, N. J.

WATER TREATMENT—*Water Softening Agents* (Also Chelating Agents and Sequestring Agents

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Alrose Chemical Co., P. O. Box 1294, Providence, R. I.
American Agricultural Chemical Co., 50 Church St., New York 7, N. Y.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
Arkansas Co., 185 Foundry St., Newark, N. J.
BERSWORTH CHEMICAL CO., Framingham, Mass. ADV. PG. 270.
Blockson Chemical Co., Joliet, Ill.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Calgon, Inc., 323 Fourth Ave., Pittsburgh 30, Pa.
Charlotte Chemical Laboratories, Inc., 1120 South Boulevard, Charlotte, N. C.
Chemical Processing Co., P. O. Box 5186, Charlotte 5, N. C.
Dow Chemical Co., Midland, Mich.
DU PONT DE NEMOURS & CO., E. I., Dyes and Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Elgin Softener Corp., 134 North Grove Ave., Elgin, Ill.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
GENERAL CHEMICAL DIV., ALLIED CHEM & DYE CORP., 40 Rector St., New York 6, N. Y. ADV. PG. 267.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
LAUREL SOAP MFG. CO., Almond & Tioga St., Philadelphia, Pa. ADV. PG. 284.
MATHIESON CHEMICAL CORP., Mathieson Bldg., Baltimore 3, Md. ADV. PG. 2.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Monsanto Chemical Co., Phosphate Div., 1724 South Second St., St. Louis 4, Mo.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
Permutit Co., 330 West 42 St., New York 36, N. Y.
PHILADELPHIA QUARTZ CO., 1146 Public Ledger Bldg., Philadelphia 6, Pa. ADV. PG. 284.
RUMFORD CHEMICAL WORKS, Rumford 16, R. I. ADV. PG. 272.
Scher Bros., 519 Getty Ave., Clifton, N. J.
SELIG CO., THE, 336-350 Marietta, N. W., Atlanta, Ga. ADV. PG. 282.
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 Broadway, New York 6, N. Y. ADV. PG. 274.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263

WAXES—*Natural*

Bees ..... A
Candelilla ..... B
Carnauba (Brazil) C
Ceresin ..... D
Japan ..... E
Montan ..... F
Ozokerite ..... G

Chemical Processing Co., P. O. Box 5186, Charlotte 5, N. C. ..... E
Dolge Co., C. B., The, Ferry Lane, Westport, Conn. C
Elmer & Amend, 635 Greenwich St., New York 14, N. Y. ..... A, B, C, D, E, G
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind. C
Penetone Co., Tenafly, N. J. C
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ..... E ADV. PG. 286.
Puritan Chemical Co., 916 Ashby St., N. W., Atlanta, Ga. C
Salmon & Bro., L. A., 216 Pearl St., New York 38, N. Y. ..... D, G

WAXES—*Synthetic*

AMERICAN POLYMER CORP., 101 Foster St., Peabody, Mass. ADV. PG. 264.
American Viscose Corp., Textile Chemicals Div., Marcus Hook, Pa.
Archer-Daniels-Midland Co., Chem. Prods. Div., 2191 West 110 St., Cleveland 2, Ohio
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Chemical Processing Co., P. O. Box 5186, Charlotte 5, N. C.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Dolge Co., The C. B., Ferry Lane, Westport, Conn.
Dow Chemical Co., Midland, Mich.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
POLYMER SOUTHERN, INC., Box 2184, Greenville, S. C. ADV. PG. 286.
Puritan Chemical Co., 916 Ashby St., N. W., Atlanta, Ga.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
SIDDALL CO., GEORGE F., Spartanburg, S. C. ADV. PG. 286.
Specialty Products Co., 190 Warren St., Jersey City 2, N. J.
Swift & Co., 160 Fifth St. & Indianapolis Blvd., Hammond, Ind.
Witco Chemical Co., 260 Madison Ave., New York 16, N. Y.

WEBBING & BRAID—*Elastic*

UNITED ELASTIC CORP., Easthampton, Mass. ADV. PG. 202.

WEB-FORMING MACHINES

CURLATOR CORP., 501 West Commercial St., East Rochester, N. Y. ADV. PG. 141.
Rando—See Curlator Corp.

WEFT-STRAIGHTENING MACHINES (See Filling-Straightening Machines)

WEIGHTS—*Creel-Tension*

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C. ADV. PG. 96.
Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

WEIGHTS—*Let-Off*

Crompton & Knowles Loom Works, 93 Grand St., P. O. Box 1131, Worcester, Mass.
DRAPER CORP., Hopedale, Mass. ADV. PG. 1.
LIVERMORE CORP., H. F., 20 Linden St., Allston 34 Mass. ADV. PG. 199.

WEIGHTS—*Spinning Roll*

Roberts Company, P. O. Box 931, Sanford, N. C.
Whitin Machine Works, Whitinsville, Mass.

WETTING AGENTS (See also Detergents, Penetrants, etc.)

Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.
Alrose Chemical Co., P. O. Box 1294, Providence, R. I.
Amalgamated Chemical Corp., Ontario & Rorer Sts., Philadelphia 34, Pa.
American Aniline & Extract Co., Venango & F Sts., Philadelphia 34, Pa.
ANTARA CHEMICALS DIV., GENERAL DYESTUFF CORP., 435 Hudson St., New York 14, N. Y. ADV. PG. 283.
American Cyanamide Co., Textile Resin Dept., Bound Brook, N. J.
Apex Chemical Co., 225 West 34th St., New York, N. Y.
Arkansas Co., 185 Foundry St., Newark, N. J.
Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.
Atlas Powder Co., Delaware Trust Bldg., Wilmington, Del.
BERSWORTH CHEMICAL CO., Framingham, Mass. ADV. PG. 270.
Bryant Chemical Corp., 6 North St., North Quincy, Mass.
Burkhart-Schier Chem. Co., Textile Mfg. Div., Chattanooga, Tenn.
Campbell & Co., Inc., John, 75 Hudson St., New York 13, N. Y.
Carbide & Carbon Chemicals Co. Div., Union Carbide & Carbon Corp., 30 East 42 St., New York 17, N. Y.
Carolina Aniline & Extract Co., 301 South Cedar St., Charlotte, N. C.
Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.
Colgate-Palmolive-Peet Co., 105 Hudson St., Jersey City 2, N. J.
Colloids Inc., 394-8 Frelinghuysen Ave., Newark 5, N. J.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14, Ohio
DU PONT DE NEMOURS & CO., E. I., Dyes & Chemicals Div., Organic Chemicals Dept., Wilmington, Del. ADV. PG. 258, 259.
Elmer & Amend, 635 Greenwich St., New York 14, N. Y.
Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.
Fancourt Co., W. F., 516 South Delaware Ave., Philadelphia 47, Pa.
Geigy Co., Inc., 89 Barclay St., New York, N. Y.
Glyco Prods. Co., Inc., 26 Court St., Brooklyn, N. Y.
Haas-Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.
Hart Products Corp., 1440 Broadway, New York 18, N. Y.
Hercules Powder Co. Inc., 994 Market St., Wilmington 99, Del.
Holcomb Mfg. Co., J. I., 1601 Barth Ave., Indianapolis, Ind.
Kem Products Co., Inc., 229 High St., Newark, N. J.
Kessler Chemical Co., Inc., State Road & Cottman Ave., Philadelphia 35, Pa.
LAUREL SOAP MFG. CO., INC., Almond & Tioga Sts., Philadelphia, Pa. ADV. PG. 284.
Magnus Chemical Co., Inc., 180 South Avenue, Garwood, N. J.
Maher Color & Chemical Co., 355 West Ontario St., Chicago, Ill.
Metro-Atlantic, Inc., 2072 Smith St., Centerdale 11, R. I.
MONA INDUSTRIES, INC., 65-75 East 23rd St., Paterson 4, N. J. ADV. PG. 284.
Monsanto Chemical Co., Organic Div., 1724 South Second St., St. Louis 4, Mo.
Moreland Chemical Co., 314 West Henry St., Spartanburg, S. C.
Morton-Withers Chem. Co., 2110 High Point Rd., Greensboro, N. C.

New York Color & Chemical Co., 374 Main St., Belleville, N. J.
Nopco Chemical Co., First & Essex Sts., Harrison, N. J.
Nyanza Color & Chemical Co., Inc., 109 Worth St., New York, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2, N. J.
PROCTER & GAMBLE CO., Gwynne Bldg., Cincinnati 2, Ohio. ADV. PG. 276.
Richmond Oil Soap & Chemical Co., Inc., 1041-1043 Frankford Ave., Philadelphia 25, Pa.
ROHM & HAAS CO., INC., TEXTILE CHEMICALS DEPT., 222 West Washington Square, Philadelphia 5, Pa. ADV. PG. 273.
ROYCE CHEMICAL CO., Carlton Hill, N. J. ADV. PG. 281.
Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.
Scher Bros., 519 Getty Ave., Clifton, N. J.
Scholler Brothers, Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.
Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga.
Sharples Chemicals, Inc., 123 Broad St., Philadelphia 9, Pa.
SIDDALL CO., GEORGE F., Spartanburg, S. C. ADV. PG. 286.
STANDARD CHEMICAL PRODUCTS, INC., 1301 Jefferson St., Hoboken, N. J. ADV. PG. 279.
Superior Materials, Inc., 120 Liberty St., New York 6, N. Y.
SURPASS CHEMICAL CO., INC., 1254 Broadway, Albany 1, N. Y. ADV. PG. 282.
Swift & Company, 4115 Packers Ave., Chicago 9, Ill.
Synthetic Chemicals, Inc., 335 McLean Blvd., Paterson 3, N. J.
Tanner Co., Chas. S., 244 South Water St., Providence, R. I.
Tennessee Corp., Organic Chems. Div., 617-629 Grant Bldg., Atlanta, Ga.
Titan Chemical Products, Inc., Mill Rd. & Wayne St., Jersey City 6, N. J.
Ultra Chemical Works, Inc., 2 Wood St., Paterson 4, N. J.
Chemical Works, Victor, 141 West Jackson Blvd., Chicago 4, Ill.
Warwick Chemical Co. Div., Sun Chemical Corp., 10-10 44 Ave., Long Island City 1, N. Y.
Wolf & Co., Jacques, 350 Lexington Ave., Passaic, N. J.
WYANDOTTE CHEMICALS CORP., Dept. TW-Textiles, Wyandotte, Mich. ADV. PG. 262, 263.

WHEAT STARCH (See Starches—Natural)

WHEELS—*Traverse*

Wayne Mfg. Co., Honesdale, Pa.

WHEELS—*Truck* (See Casters & Wheels—Truck)

WHIPPING MACHINES

PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.

WHITING (See Calcium—Salts of—Carbonate)

WHIZZERS (See Extractors—Centrifugal)

WILLOWS (See Dusting Machine—Wool & Waste)

WINDERS—*Ball*

Ayrton & Co. Ltd., Wm., Manchester, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
SMITH & SON, INC., JAMES, 982 Southbridge St., Worcester 3, Mass. ADV. PG. 248.
Smith & Smith Inc., 982 Southbridge St., Worcester 3, Mass.

WINDERS—*Cloth*

BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass. ADV. PG. 106.
BUTTERWORTH & SONS CO., H. W., Bethayres, Pa. ADV. PG. 120, 121.
CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester 3, Mass. ADV. PG. 122, 123.
Drying & Heating Equipment Co., 51 Blake Ave., Brooklyn 12, N. Y.
DURRANT & SONS LTD., G., Stockport, England, Repr. by R. J. Dealy & Sons, 263 Summer St., Boston, Mass. ADV. PG. 162.
Fabric Machinery Co. Inc., 307 Center St., Bridgeport, Conn.
Firsching & Son, Inc., J. A., 421 Broad St., Utica, N. Y.
GREYSTONE MACHINE CORP., P. O. Box 6, Centerdale, R. I. ADV. PG. 218.
INDUSTRIAL OVENS, INC., 13825 Triskett Rd., Cleveland 11, Ohio. ADV. PG. 154.
MARSHALL & WILLIAMS CORP., 46 Baker St., Providence 5, R. I. ADV. PG. 100.
Measuregraph Co., The, 4245 Forest Park Blvd., St. Louis 8, Mo.
Morrison Machine Co., 1171 Madison Ave., Paterson, N. J.
PARKS & WOOLSON MACHINE CO., Springfield, Vt. ADV. PG. 192.
Perkins & Son, Inc., B. F., P. O. Box 388, Holyoke, Mass.
Seholfield—See Curtis & Marble Machine Co.
UTICA NOVELTY & MILL SPECIALTY CO., 2145 Dwyer Ave., Utica 2, N. Y. ADV. PG. 238.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.
Werner Machine Co., 183 Autumn St., Passaic, N. J.
Windle Machine Works, North Grafton, Mass.
WINSOR & JERAULD MFG. CO., 1268 Eddy St., Providence 5, R. I. ADV. PG. 90.

WINDERS—*Cone*

Abbott Machine Co. Inc., Wilton, N. H.
Ambler Textile Machy. Co., Bodine & York Sts., Philadelphia 33, Pa.
American Schweiter Co., Box 209, Whitinsville, Mass.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Roto-Coner—See Universal Winding Co.
Schlafhorst & Co., W., M. Gladbach, Germany
Universal Winding Co., P. O. Box 1605, Providence, R. I.

WINDERS—*Cop* (See Winders—Filling-Bobbin)

WINDERS—*Fillet*

Hetherington & Sons, Inc., John, Gastonia, N. C.

WINDERS—*Filling-Bobbin*

Abbott Machine Co. Inc., Wilton, N. H.
Ambler Textile Machy. Co., Bodine & York Sts., Philadelphia 33, Pa.
American Schweiter Co., Box 209, Whitinsville, Mass.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Johnson & Bassett, Inc., 114 Foster St., Worcester, Mass.
Kanoy & Sons Mach. Co., 4111 Thrift Rd., Charlotte, N. C.
Lazenby Co., The F. A., 3106 Elm Ave., Baltimore 11, Md.
Mellor Bromley Group, Inc., The, 432 Fourth Ave., New York 16, N. Y.
Plutte Koecke, Wuppertal-Barmen, Germany, represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Schlafhorst & Co., W., M. Gladbach, Germany
Universal Winding Co., P. O. Box 1605, Providence, R. I.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa.
Whitin Machine Works, Whitinsville, Mass.

WINDERS—*Knit Goods* (See Winders—Cloth)

WINDERS—*Lap* (See Lappers—Silver)

WINDERS—*Multiple-End*

American Schweiter Co., Box 209, Whitinsville, Mass.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Schlafhorst & Co., W., M. Gladbach, Germany
Sipp-Eastwood Corp., 45 Keen St., Paterson 4, N. J.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

WINDERS—*Narrow-Fabric* (See Winders—Cloth)

WINDERS—*Narrow-Fabric Filling-Bobbin*

FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Plutte Koecke, Wuppertal-Barmen, Germany, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

WINDERS—*Quill* (See Winders—Filling Bobbin)

WINDERS—*Roll* (See Winders—Cloth)

WINDERS—*Skein* (See also Reels—Skeining)

Ambler Textile Machy. Co., Bodine & York Sts., Philadelphia 33, Pa.
American Schweiter Co., Box 209, Whitinsville, Mass.
Collins Bros. Machine Co., 647 Roosevelt Ave., Pawtucket, R. I.
Fletcher Wks. Inc., Glenwood Ave. & Second St., Philadelphia, Pa.
Ruf Machine Co., 420 East 93 St., New York 28, N. Y.
Sipp-Eastwood Corp., 45 Keen St., Paterson, N. J.
U. S. Textile Machine Co., 411 Gilligan St., Scranton 8, Pa.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

WINDERS—*Thread* (See Spoolers—Thread)

WINDERS—*Tube*

Abbott Machine Co. Inc., Wilton, N. H.
American Schweiter Co., Box 209, Whitinsville, Mass.
FOSTER MACHINE CO., Westfield, Mass. ADV. PG. 128, 129.
Southern Plastics Co., 408 Pendleton St., Columbia, S. C.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

WIRE—*Steel* (See Steel)

WIRE NAILS—*Steel* (See Steel)

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Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.
Bates Mfg. Co., 30 Vesey St., New York, N. Y.
Burgess Fastening Co., 1220 West Ninth St., Cleveland 13, Ohio
Clipper Belt Lacer Co., 974 Front Ave., N. W., Grand Rapids 2, Mich.
Heller Company, 2135 Superior Ave., N. E., Cleveland 14, Ohio

Mercury—See Bates Manufacturing Co.
Stapl-Fast—See Burgess Fastening Co.
TALCOTT, W. O. & M. W., INC., 91 Sabin St., Providence, R. I. ADV. PG. 252.

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WOOL SPINNING FRAMES (See Spinning Frames—Wool)

WORMS

Cleveland Worm & Gear Co., The, 3249 East 80th St., Cleveland 4, Ohio

WORMS—Take-Up

BAHAN TEXTILE MACHY. CO., Camp Rd., Greenville, S. C. ADV. PG. 94.
Cleveland Worm & Gear Co., The, 3249 East 80th St., Cleveland 4, Ohio
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HAYSSEN MFG. CO., 1305 St. Clair Ave., Sheboygan, Wis. ADV. PG. 173.
Van Vlaanderen Machine Co., 370 Straight St., Paterson 3, N. J.

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WRINGERS (See Mangles)

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YARN CLEARERS (See Clearers—Flat & Revolving or Slub Catchers)

YARN DYEING MACHINES (See Dyeing Machines—Package or Skein)

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Griffin & Sons, Ira L., 1429 Bryant St., Charlotte, N. C.
Hibbert & Co. Ltd., Joseph, Darwin, England, Represented by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.
Kruckels K. G., J., Zell (Wienstral), Germany, Represented by Textile Machinery Import Co., 277 North Ave., New Rochelle, N. Y.
Universal Winding Co., P. O. Box 1605, Providence, R. I.

YARN-TREATING MACHINES (See Impregnating Machines)

YARNS & FIBERS—*Acetate Producers*

Filament ..... **A**
Staple ..... **B**
American Viscose Corp., 350 Fifth Ave., New York 1, N. Y. ..... A
Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y. ..... A, B
du Pont de Nemours & Co., E. I., Wilmington, Del . . A
Tennessee Eastman Co., Tenney Associates, Inc., A. M., 260 Madison Ave., New York 16, N. Y. ..... A, B

YARNS & FIBERS—*Cuprammonium Rayon*

American Bemberg Corp., 261 Fifth Ave., New York 16, N. Y.

YARNS & FIBERS—*Rayon Producers*

Filament ..... **A**
Staple ..... **B**
Tire ..... **C**

American Enka Corp., 206 Madison Ave., New York 16, N. Y. ..... A, C
American Viscose Corp., 350 Fifth Ave., New York 1, N. Y. ..... A, B, C
Beaunit Mills, Inc., Coosa Pines Div., 261 Fifth Ave., New York 16, N. Y. ..... A
Courtaulds Inc., 600 Fifth Ave., New York, N. Y. ..... B
du Pont de Nemours & Co., Inc., E. I., Wilmington, Del. ..... A, B, C
Industrial Rayon Corp., 500 Fifth Ave., New York, N. Y. ..... A, C
North American Rayon Corp., 261 Fifth Ave., New York 16, N. Y. C
Skenandoa Rayon Corp., 261 Fifth Ave., New York 16, N. Y. ..... A

YARNS & FIBERS—*Synthetic-Fiber Producers* (Filament & Staple)

Acrylic (Acrilan, Dynel, Orlon, X-51) ..... **A**
Glass ..... **B**
Nylon ..... **C**
Polyester (Dacron) ..... **D**
Polyethylene ..... **E**
Protein (Vicara) ..... **F**
Vinyl Derivatives (Saran, Vinyon, "HH", Vinyon "N") ..... **G**

American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y. ..... A
American Viscose Corp., 350 Fifth Ave., New York 1, N. Y. ..... G
Bolta-Saran, Inc., Lawrence, Mass. ..... G
Carbide & Carbon Chemicals Co., Textile Fibers Dept., 30 East 42 St., New York 17, N. Y. ..... A, G
Chemstrand Corp., Decatur, Ala. ..... A, C
Dawbarn Brothers, Inc., Waynesboro, Va. ..... G
du Pont de Nemours & Co., Inc., E. I., Wilmington, Del. ..... A, C, D
Firestone Plastics Co., 350 Fifth Ave., New York 1, N. Y. ..... E
Glass Fibers, Inc., 1810 Madison Ave., Toledo, Ohio ..... B
Libby-Owens-Ford Glass Co., Toledo, Ohio ..... B
Lus-Trus Extruded Plastics, Inc., 200 Hill St., Ann Arbor, Mich. ..... G
National Plastic Products Co., Odenton, Md. ..... G
Owens-Corning Fiberglass Corp., Textile Products Div., 16 East 56 St., New York 22, N. Y. ..... B
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YARNS & FIBER—*Sales*

Asbestos ..... **A**
Bast (Flax, Hemp, Jute, etc.) ..... **B**
Cotton ..... **C**
Cotton (Chemically Treated) ..... **D**
Cotton (Mercerized) ..... **E**
Fur ..... **F**
Hair ..... **G**
Paper ..... **H**
Novelty ..... **I**
Rayon, Acetate & Synthetics ..... **J**
Silk ..... **K**
Woolen ..... **L**
Worsted ..... **M**

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American & Efird Mills, Inc., Mount Holly, N. C. ..... C, E, J, M
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Franklin Process, 40 Worth St., New York, N. Y. C
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Chloride ..... **B**
Dust ..... **C**
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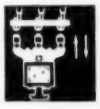

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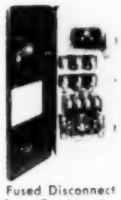
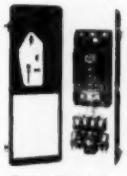


Fused Disconnect Type Combination Starter



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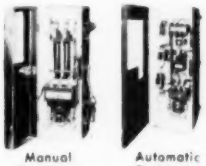
Push Button Limit Switch

Push Buttons and Limit Switches

For Velvet Smooth Starting



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A-B Quality

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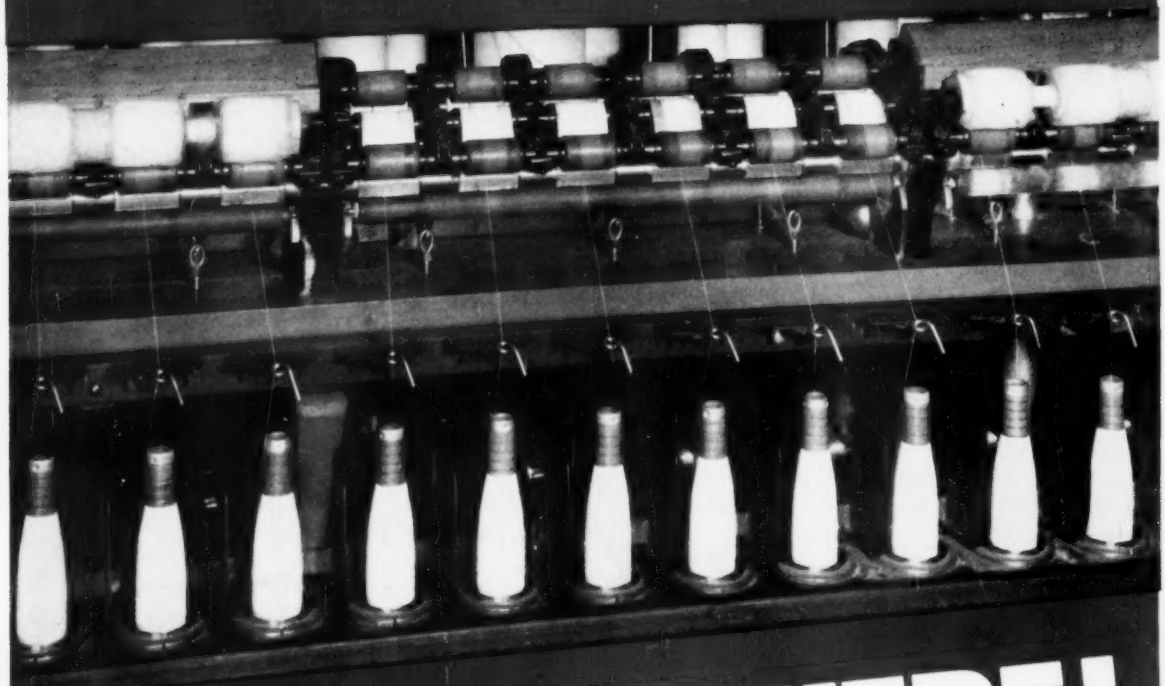
ALLEN-BRADLEY Quality

MOTOR CONTROLS FOR TEXTILE MILLS

STAZON HERE...



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BIG THING to remember about *Texaco Stazon* is that it *stays on* the bearing surfaces — does not creep, splatter or drip. Use it for top rolls, saddles, roll stands or shell roll mandrels and get cleaner yarn. Use it for loom crank and cam shaft bearings and cloth comes through without oil stain.

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TEXACO

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